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MASTER'S

ST. CLOUD STATE COLLEGE

THESIS

ST. CLOUD, MINNESOTA 56301

ABSTRACTS

1969/1970

FORWARD

This publication, the fourth in a series which began in 1962, contains the abstracts of Master's Theses completed by graduate students of St. Cloud State College. The bulletin contains those theses completed during the period from July 1965 through June of 1969.

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MASTER'S THESIS ABSTRACTS

1970

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ART

A STATEMENT CONCERNING ILLUSIONISM AND ENVIRONMENTALISM IN THE VISUAL THESIS

by Jay Paul Bell

PROBLEM: The artist's primary concern was the investigation of illusionism, environmentalism and their successful use in relation to one another.

PROCEDURE: The artist began his investigation by re-examining the illusionistic concept of painting affluent in the late antique and Dutch baroque periods. He also examined the possibilities of extending illusionism into the realm of the environmental art form. This entailed the selection of a number of environmental artists currently engaged in the usage of illusionism. This examination contributed to the evolution of the artist's concept of environmentalism, however his own experimentation and changes were more significant.

FINDINGS: From the investigation and experimentation the artist has combined illusionism and environmentalism. This combination is visually presented in the photographs found at the end of the written thesis. The combination of illusionism and environmentalism has generated a dissatisfaction with the concept of art as an autonomous object. A realization of the potentialities of combining or gravitating art and reality into a closer relationship has initiated a re-evaluation of artistic consideration. The artist believes this to be necessary for complete involvement with the object.

SUMMARY AND CONCLUSIONS: To state a conclusion would be undermining the continuing process of experimentation the artist is ultimately involved with. Illusionism and environmentalism has opened a vast area of visual consideration for the artist. The artist's interest in the relationship of art and reality has initiated a re-evaluation of esthetic considerations in his own work and the considerations imposed upon the viewer. These considerations do not culminate, but rather continue in future investigations of the artist.

THESIS COMMITTEE: David Brown, Chairman; Charles L. Crane

DATE OF COMPLETION: August 1968

A DESCRIPTION OF THE VISUAL THESIS

by Peter Hartmann Flick

PROBLEM: A course in Thesis for a Master of Arts candidate in Art entails the making of the Visual Thesis, paintings and drawings, an exhibition of the Visual Thesis and a written description of the Visual Thesis. The problem was to literally describe and analyze the Visual Thesis.

PROCEDURE: The artist attempted through the written thesis to make the Visual Thesis understood by simply and honestly describing the processes and means of expression, influences upon the artist, objectives and concepts of the artist and examples of the work.

FINDINGS: The examination of the Visual Thesis lead to new insight into the work and confirmation of the basic personal concepts and original content of the work on behalf of the artist. Seven works were found that illustrated the artist's movement and artistic concepts. Photographs of these seven works are at the end of the written thesis.

SUMMARY AND CONCLUSIONS: The written thesis briefly describes the processes and means of expression, the artist's objectives, personal concepts and their relationship to the work, influences upon the artist and the work and occasionally a specific work which illustrates an idea or a concept. The photographs of the seven representative works and the brief descriptive captions at the end of the written thesis will benefit understanding of the Visual Thesis and the description of the Visual Thesis.

THESIS COMMITTEE: David Brown, Chairman; James Roy
DATE OF COMPLETION: August 1967

MIMESIS AND REORGANIZATION OF NATURAL FORM

by William Gabbert

PROBLEM: The master of arts thesis in art consists of a dual problem: (1) the exhibition of work completed during the academic year and (2) the writing of a descriptive thesis relating both to the visual thesis as well as the theories and practices of the artist during the execution of works in the exhibition.

PROCEDURES: Due to the dual nature of the problem it was approached in several ways. From the total number of works executed during the academic year it was necessary to select a number of works that the artist felt were superior in craftsmanship and aesthetic merit and to display this total body as a visual thesis exhibition. This body of work was then analyzed according to the standards and theories of the artist, at the same time a progress of development in artistic skills was traced.

FINDINGS: The process of analysis enabled the artist to look objectively and critically at the works as well as his development in the arts from early efforts in the area. This critique uncovered several facts both theoretical and technical in nature. Some ideas previously adhered to were discarded after closer examination and the premise of the artist was clarified and defined according to his present needs and aspirations. It was found that early at-

tempts in the arts were useful and, while not judged to be superior by the artist's present standards, served as essential building blocks in the artist's career. Problems of a technical nature were resolved or discarded during the evaluation and a concise and useful basis for artistic production resulted.

CONCLUSIONS AND SUMMARIES: The process of evaluation and the findings that resulted confirmed many of the ideas held previously by the artist. Certain ideas and concepts were discarded when found to be wanting of logic. The final analysis however confirms the artist's beliefs in general and provides a directional tool in considering future work. An examination of successes and failures, it is felt, will eliminate many of the latter and provide for greater consistency of the former in future productions.

The value of the work in relation to contemporary events in the arts has been judged to be satisfactory and at times refreshingly new and interesting.

THESIS COMMITTEE: David Brown, Chairman; Charles L. Crane

DATE OF COMPLETION: August 1968

A STUDY OF ELECTRIC LIGHT AS AN AESTHETIC MOVEMENT IN ART

by William H. Grange

PROBLEM: Artificial light brought a new flexibility to our lives when it created day without night, and space without walls. Light technology has developed in the past to such a high degree that we may now use it as an artistic means. This visual thesis is a study of colored blinking electric light for the purpose of creative expression in art.

PROCEDURE: The problem was attacked by actually building sculptural environments and using colored lights to reflect illusional stimulus. Each creative work had to be built and analyzed both for its emotional aspects as well as its visual qualities. The artist had to orient himself both technologically and aesthetically towards the problem.

FINDINGS: Upon a thorough examination and analysis of the artist's work many illusions of color seemed to exist. The blinking lights placed both in and on the works produced a movement of their own as well as new colors which did not exist prior to this movement.

SUMMARY AND CONCLUSIONS: The thesis gives a brief analysis of the problems involved and describes each step taken by the artist to solve them. Explanations are offered concerning the process and means of expression; the values and philosophies of the artist are stated. A list of materials used and photographs of the work in addition to information pertinent to each paint-

ing can be found at the end of the thesis. The photographs are placed in chronological order so that the viewer might see the progression of the artist's work.

THESIS COMMITTEE: Charles L. Crane, Chairman; David Brown

DATE OF COMPLETION: June 1968

AN EXPERIMENTAL INVESTIGATION OF THE EFFECTS OF VISUAL AIDS ON CREATIVITY IN ART EDUCATION

by John Guy Grengs

PROBLEM: During recent years authorities have been in disagreement concerning motivational methods used in art education. Students have been motivated through visual aids such as films, slides, photographs, and professional examples, or through teacher-pupil verbalization. It was the purpose of the investigation to determine whether or not (1) elementary and secondary students tend to copy from visual aids used as methods of motivation; (2) secondary students tend to copy from visual aids more than elementary students; and (3) verbal motivation is sufficient to stimulate creativity in students.

PROCEDURE: Four experiments were devised to determine the effects of visual aids on creativity in elementary and secondary students. They included a landscape experiment conducted in grades two, five, nine, and twelve; a watercolor experiment in grade nine; a yarn and a string experiment in grade eight; and a relief sculpture experiment in grade nine. The experiments were administered to elementary and secondary students from Independent School District 623, Roseville, Minnesota. Two groups of ten students each were chosen at random from each grade level for each experiment. Students in the first group were asked to solve an art problem, having been motivated through the use of visual aids. Students in the second group were motivated through teacher-pupil verbalization. Three professional judges decided whether or not students' work showed influence of the aids.

FINDINGS: The results showed that 91.43 per cent of all students given visual aids as motivation to an art problem were influenced by the examples. In the landscape experiment elementary students copied from visual aids as often as secondary students. Verbal motivation proved to be very effective as a method of stimulating creativity in elementary and secondary students.

SUMMARY AND CONCLUSIONS: Visual aids, when used as methods of motivation in art education, were detrimental to creativity among elementary and secondary students. Students who were given visual aids as motivation to assignments in art copied from the aids. Verbally-oriented students set their own goals and solved their own problems.

THESIS COMMITTEE: James Roy, Chairman; Laurie L. Halberg

DATE OF COMPLETION: August 1966

THE DEVELOPMENT OF A CREATIVITY TEST AND ITS ROLE IN THE IDENTIFICATION OF FOUR ARTISTIC-CREATIVE TYPES IN A HIGH SCHOOL GENERAL ART COURSE

by Reinart Wayne Holland

PROBLEM: It was the purpose of the study (1) to devise, administer, and score a creativity test which would support the observations of the researcher concerning creative students in a high school general art course; (2) to categorize student art work according to aesthetic quality; and (3) to equate test results with aesthetic quality to identify students with extreme combinations of the two.

PROCEDURE: Creative questions were devised by the researcher and administered to 118 eleventh and twelfth grade general art students. A scoring method was developed after studying the responses of those judged to be highly creative. Art work was judged for aesthetic quality and thirteen classifications resulted. Test scores, aesthetic quality scores, and IQ scores were charted on an index to illustrate combinations for each student.

FINDINGS: The index revealed a pattern of high relationship between aesthetic quality, creativity, and IQ scores. Its four corners defined four extreme types of students branching from the main body of general art students. The extreme ends of the normal pattern were labeled "artist-high creative" and "non artist-low creative." Both represented common combinations of aesthetic quality, creativity, and IQ scores. Uncommon combinations of the three scores, or those who did not conform to the normal pattern, formed the second two types of students. These were called "artist-low creative" and "non artist-high creative." While the first two types showed a definite pattern of IQ scores, the second two showed an erratic pattern, some being very high, others very low. Both, however, had a mean IQ which fell above the non artist-low creative type, but below that of the artist-high creative type.

SUMMARY AND CONCLUSIONS: The test, with an index, was judged to be beneficial to an art teacher in assessing the creative potential of each art class. Given early in the school year, it could aid in evaluating students and in adjusting the art program to fulfill the needs and capabilities of each type of student. While the test would be helpful in all art classes, the index and its four extreme types would be valid only in a general art class where diverse ranges of artistic, creative, and intellectual abilities would be evident.

THESIS COMMITTEE: James Roy, Chairman

DATE OF COMPLETION: August 1966

AN ANALYSIS OF THE VISUAL THESIS

by Richard Allen Lenz

PROBLEM: Since this is an analysis of the visual thesis, this paper is support for the style chosen by the artist. Starting out with the assumption that there are similarities between anthropomorphic forms, the artist sought to related landscape and human form through painting.

PROCEDURE: Using the hard-edge technique of painting with sharp, clean edges and pure color, the artist enlarged form, modified it, and reduced it to essential shapes. Colors were chosen to convey the mood and the tone of the paintings.

FINDINGS: The result was paintings that are generally close-ups, suggestive of a sort of underlying remotely sensual human form but also suggestive of nature. The artist retained the ambiguity between illusionistic space and non illusionism which is inherent in hard-edge painting so as to continue the ambiguity between landscape and the human form. The lyrical quality of the titles further enhances this ambiguity of the paintings.

SUMMARY AND CONCLUSIONS: The artist found that through isolation of form through simplification for clarification, he could convey the soft and flowing quality found in both nature and the human form.

THESIS COMMITTEE: Charles L. Crane, Chariman; David Brown

DATE OF COMPLETION: March 1969

AN ANALYSIS OF THE VISUAL THESIS

by Robert G. Mattson

PROBLEM: A course in Thesis for an M.A. candidate in Art entailed the making and hanging of paintings, drawings, and prints. The Thesis Exhibition is the result of this course. The problem was then to write a thesis that would analyze, and to some extent describe, the work of the Thesis Exhibition.

PROCEDURE: The problem was attacked by examining the intellectual and visual aspects of the work in the Thesis Exhibition and analyzing the results of this examination. The objectives of the analysis were to discover the values and influences in the works and to place them in a proper perspective with tradition and the artist's sensibilities.

FINDINGS: The examination and analysis of the visual aspects of the work took the form of a critique of the good and bad elements of the work and a rejection of those works that did not meet the standards of visual excellence. An examination and analysis of the artist's sensibilities gave rise to the conclusion that the content of the remaining work, as well as the artist's motivations, was basically sound. A total of ten paintings and graphic works were

found to be consistent and continuous with the artist's intellect and the visual values established by centuries of tradition in the arts.

The ratio of work judged to be successful by the artist and his advisor (2:5) shows that a learning process was in effect during the course of the year. (1:10 represents an approximate ratio for purposes of comparison.)

SUMMARY AND CONCLUSIONS: The thesis describes briefly the problem and objectives and from there it goes on to examine certain factors such as formal and informal influences, the artistic process, and the values of the artist, all of which have an effect on the production of works of art. When the occasion warranted, a specific work was described in relation to these factors and the effect they may have had on that particular work. Photographs of the work in addition to technical information pertinent to each photograph can be found at the end of the written thesis. A brief descriptive caption discusses each work individually.

THESIS COMMITTEE: David Brown, Chairman; William J. Ellingson
DATE OF COMPLETION: June 1967

A DESCRIPTION OF THE VISUAL THESIS

by Allan Norbert Meyer

PROBLEM: This paper is presented as a supplement to the visual thesis which consisted of the planning, execution and hanging of the paintings which formed the significant body of works completed by the artist in the Master of Arts program. It is presented in a way that is meant to enlighten and enlarge upon the visual aspect of the thesis. It was the purpose of the artist to express, in the paper, his views about his work and the relationship of that work with the general public. An attempt was made to bridge the gap that has developed between the artist and his viewers and in so doing, help the viewers to understand better what it is that causes them to enjoy an artist's work.

PROCEDURE: It was decided that the statement or intention of a painting was not so much in the painting as in the viewer's mind. The painting was only part of the enjoyment involved since it was felt that appreciation of a painting depended on what the viewer knew about it and the effect it had on him. Looking at a painting stimulated the viewer to thoughts which he might not have had, had he not looked at that particular painting. In other words, it was believed that it was not necessarily what the artist puts into a painting, but what the viewer brings to it that gives a painting its appeal or notoriety.

The painting of single words from magazine mastheads, whole covers with specific subject matter and, later on, animals proved to be the best solution to the problem of regaining stable artist-public relations. The viewer was allowed, within certain limits, to interpret the paintings he saw for himself in a way that made him realize what he was doing and justified it at the same time. The viewer was aware that the artist was actively searching for his approval and appreciation. That would have the effect of drawing the viewer toward the artist and create better feelings between them. All this had to

be accomplished without the artist compromising his own personal feelings about his place in the world and the art which he produced.

FINDINGS: The artist accomplished all this by doing paintings of a paradoxical nature. Viewers were forced to look differently at things they had taken for granted. Of all the methods employed, the painting of animals best suited the artist's purpose because of their susceptibility to being stereotyped and the opportunity to break those stereotypes.

SUMMARY AND CONCLUSION: Although the method of doing magazine mast-heads and covers first employed by the artist to close the gap between the artist and the public seemed to work well, the painting of animals eventually worked the best. Future paintings, even though they may not employ the use of animal subject matter in them, will still use the lessons learned from painting them.

THESIS COMMITTEE: David Brown, Chairman; William J. Ellingson
DATE OF COMPLETION: July 1967

A MINIMAL APPROACH IN THE EVOLUTION OF A PERSONAL STYLE: A SUPPLEMENT TO THE VISUAL THESIS

by Kenneth Murlin Nelsen

PROBLEM: The problem of the visual thesis was to make inquiries through visual means--sculpture or structures--about implied movement in space and the interaction between them. The problem was approached through the construction of structures which, through their form and composition would record a movement in space and imply the continuation of that movement.

PROCEDURE: The written supplement to the visual thesis was intended as a background, indicating that art evolves historically, and illustrating the development of Minimal Art as a stage in that evolution. It further traced the artist's personal evolution during the year's study from an organic style to a totally Minimal approach to art and described and explained the works in the visual thesis, including color illustrations.

FINDINGS: Because art is an evolutionary phenomenon, a conclusion drawn from the thesis would preclude further involvement in art. A single area of inquiry--even so specific as a cohesive exhibition about the formal problem of movement in space--serves merely as a step in the evolution of a personal style. The works cannot be viewed as answers or solutions to the problem because the problem itself is in a constant state of evolution.

THESIS COMMITTEE: Charles L. Crane, Chairman; Barry Parker
DATE OF COMPLETION: December 1968

AN ANALYSIS OF IMPERSONALIZATION AND INTELLECTUALISM IN THE VISUAL THESIS

by Roger Laux Nelson

PROBLEM: A course in Thesis for a M.A. candidate in Art entailed the making and hanging of paintings. The Thesis Exhibition is the result of this course and an academic year's work. Painting was the artist's major field during the past year. The problem was then to write a thesis that would analyze, and to some extent describe, the work of the Thesis Exhibition.

PROCEDURE: The problem was brought forward by examining the concepts which contributed to the direction of the two major movements in art today, Pop Art and Post-Painterly Abstraction. Intellectualism and impersonalization were the ideas which proved to be of primary interest to this artist from the two current movements.

The objectives of the analysis were to determine to what extent intellectualism and impersonalization had been incorporated into the paintings of the visual thesis, and to isolate the major sources of influence on the work.

FINDINGS: Upon examination and analysis of the paintings of this thesis, and through comparisons with works by well known artist of the popular movements mentioned above, it became apparent that intellectualism and impersonalization were concepts which played a major role in the evolution of the thesis work. It was further established that Post-Painterly Abstraction became the primary influence because of the characteristics which are common to the movement. The forms were large and were composed of flat colors that were totally without surface texture, and were non-illusionistic. They also reflected an interest in craftsmanship which has become an uncommon quality in much of the painting of this century.

SUMMARY AND CONCLUSIONS: The artists' involvement with impersonalization and intellectualism and the difficulties he encountered with them were briefly described. He then examined several formal and technical questions which when solved, helped him to achieve his desired goals.

Photographs have been included at the end of the written thesis. They were referred to occasionally for the purpose of illustrating and clarifying problems and solutions. Technical information and pertinent commentary accompanies each photographed painting.

THESIS COMMITTEE: David Brown, Chairman; Charles L. Crane

DATE OF COMPLETION: June 1968

A LOOSE-BRICK, DOWNDRAFT, OIL DRIP SALT-KILN

by Eileen Isabel Ondracek

PROBLEM: It was the purpose of this study to construct a salt-glaze kiln that would be practical for the use of the individual artist-craftsman. A second problem concerned finding a kiln wash that would adhere to the shelves and protect them and the inside of the kiln from the violence of the action caused by the salt-glazed process.

PROCEDURE: A loose-brick kiln was constructed to be fired with fuel oil. The main features of the kiln were the louvered fuel oil burners, the long fire box areas located under the floor, the central flue, the elevated salt holes, and the cast arched-roof. Tests were made using alumina hydrate and Florida kaolin to see if an effective kiln wash could be found for the salt-kiln.

FINDINGS: The kiln that was developed and built for this thesis is doing an effective job as a salt-glaze kiln. The kiln wash that was developed is doing an adequate job of protecting the shelves. Because of handling, small sections of the shelves have had to be rewashed.

SUMMARY AND CONCLUSIONS: It was the author's intent to build a kiln that would function in stoneware temperatures and would be acceptable as a salt-kiln. A secondary problem was to develop an effective kiln wash that would protect the shelves and the interior of the kiln.

The kiln is basically a very simple downdraft kiln with an experimental cast arched-roof. The kiln functions basically as a container for extreme heat to bring pottery to the point of vitrification.

The kiln wash that was developed is doing an effective job of protection; however, if funds permitted the purchase of shelves constructed with an almost one hundred per cent alumina content, there would be little need for the kiln wash.

Very little published research was available in the areas of salt-kilns, but the author feels that other artist-craftsmen may benefit from the research completed on this thesis.

THESIS COMMITTEE: Laurie L. Halberg, Chairman; James Roy

DATE OF COMPLETION: May 1967

AN ANALYSIS OF THE VISUAL THESIS

by Sharon Ryther

STATEMENT: A course in the curriculum leading to the Master of Arts degree in art required all candidates to present an exhibition of the work done while

working on the degree. The candidate must also write a paper analyzing and to some extent describing the work in the thesis exhibition.

PROCEDURE: The problem will involve critically viewing the work from the visual, intellectual, and technical aspects. The works must be judged not only individually, but as they relate to one another and to the artist's progress. Through this a pattern of growth of the artist will be established.

FINDINGS: The evaluation and analysis of the visual and intellectual aspects of the work took the form of a critique, an objective analysis of the work done during the past year. This led to the rejection of works that did not meet the standard of visual excellence set by the artist. This standard was based on centuries of artistic tradition. The ratio of works judged as successful by the artist and her advisor showed a learning process was in effect.

SUMMARY AND CONCLUSION: The written paper describes the problem and objectives of the artist, and from there goes to judge the formal and informal influence, the artistic process, and the values of the artist, all of which affect the production of a work of art. When needed, a specific work is described in relation to these factors. Photographs of these works can be found at the back of this paper.

THESIS COMMITTEE: William J. Ellingson, Chairman; Laurie L. Halberg

DATE OF COMPLETION: November 1967

A DESCRIPTION OF VISUAL THESIS

by Howard Arthur Strand

PROBLEM: To express specific human emotion through a combination of welded forms derived from landscape and the human figure.

PROCEDURE: The artist took from the landscape lines which give the feeling of infinite space and roughness which excludes the figure from it. He took from the figure the softness, the tenderness, the humor, all of which seem insignificant in the presence of landscape. All the qualities were combined by welding these shapes and ideas together.

FINDINGS: The combination of qualities from landscape and the figure will sometimes give the viewer the feeling which is to be found between agony, despair, and anger.

SUMMARY AND CONCLUSIONS: Specific human emotion can sometimes be expressed through a combination of welded forms derived from landscape and the human figure.

THESIS COMMITTEE: Barry Parker, Chairman; David Brown

DATE OF COMPLETION: July 1967

AN INVESTIGATION OF THE USE OF THE NUDE MODEL IN ART DEPARTMENTS OF STATE COLLEGES AND UNIVERSITIES OF FIVE UPPER MIDWEST STATES

by Merle Herman Sykora

PROBLEM: It was the purpose of this study to determine in how many state colleges and universities of Iowa, Minnesota, North Dakota, South Dakota, and Wisconsin the nude model is used, the range of degrees offered by these institutions, the number of art majors, the presumed effectiveness of the nude model for teaching form, the community reaction, the extent which the nude is used, the expense involved, and if the nude model is not used, for what reason(s).

PROCEDURE: A check-list type questionnaire was formulated and sent to the art department chairmen of the thirty four upper midwest state colleges and universities together with a stamped, self-addressed envelope for returning the questionnaire. As the questionnaires were received the responses were tabulated on a blank questionnaire form and simple percentage correlations calculated. The results were compared with the hypotheses and conclusions drawn.

FINDINGS: An 85 per cent response was noted. All institutions offered the bachelor's degree. Fifty-three per cent of the colleges and universities offered degrees beyond the bachelor's. The number of art majors ranged from zero to over one hundred. Only 28 per cent of the colleges used the nude model, but 95 per cent of those not using the nude model stated that they would if conditions were such that they could. Of those reasons given for not using the nude, 44 per cent gave "lack of models" while 30 per cent listed "college policy." The nude, for teaching form, was felt to be extremely effective by 76 per cent of the respondents. Those institutions using the nude did so in drawing, painting, sculpture, and printmaking classes both on the beginning and advanced levels. None had encountered any community (academic or other) controversy over the use of the nude model. The models were paid from \$2.25 to \$4.00 per hour.

SUMMARY AND CONCLUSIONS: While few colleges were using the nude, many would if conditions were such that they could. The model was used in almost all areas of teaching art and with no community controversy. There was no correlation between size of department and the use of the nude model. The

nude was felt to be an effective teaching aid and would be used more widely if professional models were available and administrative policy altered. Those colleges offering advanced degrees in studio areas used the nude model. This seems to point up the importance of making the nude available to the students of any institution offering or about to offer the degree Master of Arts or Master of Fine Arts in studio work.

THESIS COMMITTEE: Charles L. Crane, Chairman; James Roy

DATE OF COMPLETION: August 1965

AN EXPERIMENTAL STUDY OF THE EFFECT OF DESIGN TRAINING ON AESTHETIC JUDGMENT AND PREFERENCE OF TWO GROUPS OF SEVENTH GRADE STUDENTS AT WAYZATA JUNIOR HIGH SCHOOL, WAYZATA, MINNESOTA

by Jerome Harold Trushenski

PROBLEM: It was the purpose of the study to determine the effect of design training on aesthetic preference and judgment. The study was conducted with the hypothesis that design knowledge and aesthetic taste are acquired traits that are developed by training.

PROCEDURE: The study was conducted using two groups of seventh grade art students at Wayzata Junior High School, Wayzata, Minnesota. One group was an experimental group, the other a controlled group.

The Graves Design Judgment Test was given to each group at the beginning of the second semester of the 1967-68 school year. The test was from Maitland Graves' book, *The Art and Color of Design*. The test consisted of twenty visual cards. On each card were two designs lettered A and B. The designs were nonrepresentational compositions utilizing design elements and principles. These compositions were unaffected by any factors foreign to pure design. The students chose the design they preferred.

The control group had no formal design training during the semester. Their art classes consisted of art experiences with a variety of art media; this included drawing, painting, sculpture, and ceramics. No specific design theory was applied.

The experimental group, however, was given formal design training in addition to the same art projects and assignments as the control group. The special treatment applied to the experimental group consisted of learning and applying standard elements and principles of design.

At the end of the semester a post-test was given to each group. This was the same test they received eighteen weeks earlier.

FINDINGS: The control group scored a mean score of 10.22 points out of a possible twenty on the first test. The mean score for this same group was 11.78 points on the post-test given at the end of the semester. The increase in score was beyond chance and considered significant according to the student t test that was used to find the significance of the difference between two means for independent samples.

The experimental group scored a mean score of 11.53 on the first test and only 11.13 on the post-test. This was a mean score difference of minus .40. The design training given to the experimental group had no significant influence on raising the mean scores of the group.

The hypothesis was that the experimental group with design training would increase their design knowledge and aesthetic taste. They did not. Instead, the control group without formal design training was the group that significantly increased their scores.

SUMMARY AND CONCLUSIONS: The review of literature suggests that design standards, taste, and beauty are matters of individual opinion, relative to the times and circumstances. It may well be, as some art authorities claim, that good design taste is acquired by severe thought and a long and continued association with the best of design. Learning a prescribed set of standards may confuse an individual's personal judgment and taste.

The tests conducted to determine the effects of design training on judgment and preference seem to indicate that the hypothesis was false. It appeared that design training and theory did not improve design judgment and taste nor did it aid in the improvement of preference test scores. The hypothesis was rejected.

THESIS COMMITTEE: James Roy, Chairman; Charles L. Crane

DATE OF COMPLETION: August 1968

A PHILOSOPHIC EVALUATION OF THE VISUAL THESIS

by David A. Vessel

PROBLEM: The artist has a responsibility to his art and to himself to evaluate, judge, criticize and defend his work. No one is in a better position to do so, than the artist himself.

PROCEDURE: The artist unearths the philosophic principles that govern his art. Having discovered these principles, he relates them to his art and finally he evaluates his work according to these principles.

FINDINGS: The artist found the strength of his art lies in his expression of a subjective reaction to the objects of preception. The value of such art will depend on the significance of the imagery which the artist uncovers.

SUMMARY AND CONCLUSIONS: There are two sources of inspiration for the artist; nature and the work of art itself. As the artist continues to adopt an attitude of intellectual love toward the world of his creation his art will become more forceful. Every man is capable of this forcefulness in the form of creativity. To discover this creativity each man must look within himself.

THESIS COMMITTEE: David Brown, Chairman; James Roy

DATE OF COMPLETION: August 1967

BUSINESS EDUCATION

AN ANALYSIS OF THE MINNESOTA BUSINESS EDUCATION ASSOCIATION

by Arlene M. Benson

PROBLEM: The purpose of this study was to analyze the objectives, organization, and activities of the Minnesota Business Education Association for the purpose of determining how this professional organization can better meet the needs of Minnesota's business teachers.

PROCEDURE: (A) A questionnaire was sent to the presidents of forty-three state business education associations to determine the organization and activities of their organizations. The constitutions of these organizations were obtained for analysis purposes. (B) Another questionnaire was sent to a ten per cent sampling of Minnesota business educators to determine their interest in and evaluation of the present organization. (C) The data were tabulated for analysis purposes. (D) Recommendations for the improvement of the Minnesota Business Education Association were made to the Executive Committee.

FINDINGS: (A) Findings from survey of other business education associations (1) Most states have divisional and state-wide business education associations. (2) Minnesota business educators pay the same amount of dues (two dollars) as nearly fifty per cent of the other states. (3) Over fifty per cent of the states hold annual state-wide business education conventions. (4) Divisional conventions are usually held for one-half day. (5) Dues, state professional education associations, and publishing companies provide funds for the

state and divisional conventions. (6) Newsletters and bulletins are the most common communications. (7) Only fifty per cent of the states believe that their state business education association is adequately fulfilling the needs of their business educators. (B) Findings from survey of Minnesota business educators (1) The necessity for professional growth is the primary reason for membership in the Minnesota Business Education Association. (2) The neglect to respond to correspondence or publicity concerning membership is the primary reason for not belonging to the Minnesota Business Education Association. (3) The majority of the teachers rated the Minnesota Business Education Association 'fair' to 'good' in terms of how well it is fulfilling its objectives. (4) Over fifty per cent of the educators indicated that the present arrangement of a state-wide association with divisional associations is satisfactory. (5) Only twenty-five per cent of the educators believe that the Minnesota Business Education Association should affiliate with the Minnesota Education Association, Minnesota Federation of Teachers, and Minnesota Vocational Association. (6) Twenty-five per cent of the educators indicated that the Executive Committee should include state committee members. (7) Stimulating convention programs and the convention atmosphere are the chief reasons for attending state business education conventions. (8) Mediocre programs and the belief that the time could be better spent in classroom teaching are the chief reasons for not attending state business education conventions. (9) The educators favored an annual two-day state convention on Friday and Saturday in the Minneapolis-St. Paul area during the even years and outside of the Minneapolis-St. Paul area during the odd years. (10) The majority of the educators indicated that the two-dollar dues should be increased.

SUMMARY AND CONCLUSIONS: (A) The Minnesota Business Education Association should hold an annual two-day state convention on a Friday and Saturday in the Minneapolis-St. Paul area during the even years and outside of the Minneapolis-St. Paul area during the odd years. (B) Business teachers should be encouraged to seek release from their teaching duties to attend business education conventions. (C) A committee should be formed to study the results of the Minnesota Business Education Association becoming affiliated with the Minnesota Education Association, Minnesota Federation of Teachers, and Minnesota Vocational Association. (D) Members of the state committees should become members of the Executive Committee. (E) Convention programs should be improved, and the Newsletter should include items on research and articles by Minnesota business educators. (F) A committee should be formed to study the possibility of increasing the two-dollar dues.

THESIS COMMITTEE: James G. Marmas, Chairman; James A. Grunerud

DATE OF COMPLETION: August 1965

AN EXPERIMENTAL STUDY TO DETERMINE THE EFFECTIVENESS OF TEACHING BEGINNING TYPEWRITING THROUGH THE USE OF PRERECORDED-PROGRAMMED TYPEWRITING MATERIALS

by Jean Madsen

PROBLEM: The purpose of this study was to compare the differences in typewriting performances of college students enrolled in an experimental class using prerecorded-programmed instructional materials exclusively and the performance of a control class using traditional typewriting procedures.

PROCEDURE: (1) In this study, the experimental class received all of its instruction from the prerecorded-programmed materials and the control class received instruction through the use of the traditional method. (2) A set of lessons was developed to present the materials thought pertinent for beginning typewriting students. These lessons were prepared in script form and recorded on magnetic belts for use in the experimental class and the same lessons were prepared to be presented to the control class through the use of the traditional method. (3) Random sampling technique was used to select the students for the two classes. (4) The experimental class was conducted using prerecorded-programmed instructional materials and the control class was conducted through the use of the traditional methods. (5) Evaluation of student progress was made through the use of timed writings which were given to both classes on the same day covering the same copy and short written tests which attempted to measure the ability of the students to apply the skill at the typewriter keyboard to the solution of the problems which were presented to them.

FINDINGS: The following conclusions were derived from the study:

1. There was no significant difference in skill development as measured by timed writings between the experimental and control classes.
2. It was apparent that the control class was superior to the experimental class in its ability to use problem solving techniques involved in typing the problems presented to them.

SUMMARY AND CONCLUSIONS: 1. Individual differences in the experimental class were accommodated readily because the students could select the appropriate lessons from which they could receive instruction.

2. Absences in the experimental class were easily handled. The student could select the appropriate lesson from which to receive the necessary instruction.

3. Teacher time in the experimental class could be used to greater advantage by giving individual attention to students or in other creative activities.

4. The students in the experimental class appeared to be highly motivated to follow the directions given them on the taped lessons.

5. Student concentration on the lessons was greater in the experimental class as the students were not distracted by other activities in the room or the noise of the typewriters.

THESIS COMMITTEE: James G. Marmas, Chairman; Audra Whitford

DATE OF COMPLETION: December 1966

DEVELOPMENT AND USE OF BUSINESS LAW CASES

by Keith John Rauch

PURPOSE: The purpose of this study was to make available to teachers a series of twenty-five actual law cases illustrating important contractual principles and to describe several appropriate procedures for using cases in high school classes. These selected cases illustrate mutual assent, competent parties, legal purpose, consideration, and termination of contracts.

PROCEDURE: The cases included were selected and condensed from Minnesota Supreme Court decisions found in the Minnesota Reports. The following criteria were used to select the cases.

1. The cases must deal with the elements and termination of a contract.
2. The cases must effectively illustrate the important contractual principles found in a high school business law textbook.
3. The cases must contain information of interest to students.
4. The cases must appropriately reflect contractual arrangements that the students could realistically relate to everyday experiences.

In condensing the cases most of the side issues, such as legal procedures, wording of injunctions, and methods of presentation to the courts, were excluded in order to focus attention on the contractual principles involved.

Since cases are of limited value unless they can be used effectively by the classroom teacher, several suggested procedures for using the cases are included. Specifically, procedures to be followed using the techniques of briefing, discussion, mock trial, skit, and bulletin board presentations are explained.

SUMMARY: One of the most widely used teaching devices in business law is the analysis of cases. This is not only an effective way to set up a problem for analysis and judgement by students, but also resembles closely the professional disposition of legal problems. The legal situations presented in cases also provide a more realistic view of the contractual relationships that

exist between people in everyday life and can be used by teachers to promote independent thought and judgement among high school students.

At the present time, however, few cases are available or appropriate for use at the high school level. Casebooks and cases that are available are either detailed and written in language many high school students find difficult to understand or are designed primarily for use at the college level.

The cases found in this study will provide the teacher with effective illustrations of the legal principles of law found in high school textbooks. These cases and the suggested uses can provide a basis for teachers of business law to create a classroom environment that will stimulate interest and bring about a better understanding of the nature of contracts.

THESIS COMMITTEE: James G. Marmas, Chairman; John Bonsignore

DATE OF COMPLETION: May 1966

EQUITY INVESTMENTS: A SUPPLEMENT TO OR REPLACEMENT FOR LIFE INSURANCE

by Kenneth Warren Sorteberg

PROBLEM: The problem researched in this thesis is the extent to which equity investments will supplement or replace life insurance and some of the various types of equity investments that will be used to accomplish this. Related areas covered by the survey are company attitudes concerning future economic trends and the relative advantages and disadvantages of life insurance in comparison to equity investments, notably mutual funds.

PROCEDURE: Background for the study is provided by the careful examination of the characteristics of insurance contracts and of equity investments. A questionnaire survey of the one hundred largest insurance companies classified by admitted asset value and of the one hundred largest mutual funds by asset value was performed. The results of this survey are statistically analyzed.

FINDINGS: The majority of the largest mutual funds and insurance companies believe that inflation will continue. They believe that equity is a superior inflationary hedge when compared to life insurance and that the yield on life insurance cash values is inadequate to hedge against inflation. There is general disagreement between mutual funds and insurance companies in the areas of policy provisions and equity plan characteristics.

SUMMARY AND CONCLUSIONS: Insurance companies will enter the equity field through the medium of variable annuities and fund-insurance plans. Endowment insurance will virtually disappear. Variable permanent policies and

other devices will be developed. "Financial-plan" companies will be developed and insurance companies and mutual funds as we now know them will cease to exist.

To meet these changes the insurance policyholder will have to be adequately informed as to the nature of his investment. An educational program will have to be developed to provide training and to stimulate interest in this area. Life insurance companies and mutual funds will have to develop a full-service concept to meet these changing investors' needs. Lastly, extensive research must be continued in this crucial area.

THESIS COMMITTEE: LaVerne A. Cox, Chairman; A. Swenson

DATE OF COMPLETION: December 1968

A STUDY OF THE CRITERIA UTILIZED BY DATA PROCESSING MANAGEMENT IN COMPUTER PROGRAM EVALUATION

by John Kent Steingraber

PROBLEM: The purpose of this study was to determine the need for evaluation of computer programs and to establish those criteria that are considered important to data processing management in evaluating computer programs.

PROCEDURE: This study traces briefly the evolution of the computer industry from its earliest inception to present day utilization and the subsequent need for computer program evaluation. This has been accomplished through a review of the related literature including periodicals and textbooks. Very little information directly related to computer program evaluation was available. This study in order to establish current practices in the data processing field included a survey of numerous data processing managers to determine the criteria they considered as important in the evaluation of computer programs.

FINDINGS: The study determines that the computer program evaluation criteria considered most important to data processing management relate closely to the concept of just getting the job done. The study shows that some variation is found in the ranking of evaluation criteria when considering the size of the installation, the programming language used most often, or the position responsible for the task of evaluation.

SUMMARY AND CONCLUSIONS: The advances in both software and hardware have helped to de-emphasize the necessity for evaluation of computer programs. These same advances, while undermining the necessity for evaluation, have created a greater need than existed in the past for computer program evaluation.

The composite ranking of evaluation criteria by firms clearly indicated that much emphasis had been given to criteria that related directly to the concept

of "getting the job done". Criteria that were given less emphasis were those that related to the environment of the data processing center including its limitations in acquisitions of hardware, software, and qualified personnel. Evaluation criteria in a composite ranking for all firms gave the following order of importance: (1) Ease of Operation, (2) Running Time, (3) Ease of Modification, (4) Clear Operator Messages, (5) Technique, (6) Compatibility, (7) Listing Comments, and (8) Length.

The dominance by users of assembly languages was reflected by the identical ranking of criteria choices for this group of users to the composite ranking for all firms. The programming languages RPG and COBOL produce shifts in the emphasis being placed on evaluation criteria. The installation size of the firms participating in the survey displayed little significance in the ranking of evaluation criteria.

The programming supervisor placed emphasis on Ease of Modification as the most important criterion. The staff of senior programmers gave first place rating to the criterion Running Time. The managers of the data processing centers emphasized Ease of Operation as the most significant criterion. The dominance of managers as the most prevalent among those who completed the questionnaires in the survey was indicated by the identical ranking of evaluation criteria to the composite ranking for all firms.

THESIS COMMITTEE: LaVerne A. Cox, Chairman; Gandhi Rajender

DATE OF COMPLETION: August 1968

AN ANALYSIS OF THE PREPARATION IN ECONOMICS OF PROSPECTIVE BUSINESS EDUCATION AND SOCIAL STUDIES TEACHERS IN THE STATE OF MINNESOTA

by Paul J. Wenner

PROBLEM: This study was designed to analyze the background of prospective high school teachers of social studies and business education, who are preparing to teach in areas having implications for the economic literacy of high school youth. Specifically, this study seeks to determine: (1) How adequate was the preparation of prospective teachers in each of these fields in the area of economics. (2) Which of these groups of prospective teachers was best prepared in economics? (3) What will the difference be, if any, between the means scored on a test of economic understanding when college students are grouped according to age, sex, grade point average in all courses and grade point averages in economic courses.

PROCEDURE: The population for this study included business education and social studies students completing their teacher education requirements in Minnesota State Colleges and or the University of Minnesota.

The control group which was used for the purpose of determining adequacy of preparation in economics included fourth-year secondary teaching students majoring in science education and economics in each of these state colleges and or the University of Minnesota.

A testing program was conducted at three of the six teacher training institutions in the State of Minnesota. A short questionnaire was also administered to the participating students to gather data concerning sex, age, and courses taken in economics and economics related courses for the purpose of making discriminations and classifying subjects.

Student transcripts were examined to determine the number of courses each prospective teacher had taken in the area of economics. Quantitative data on the number of quarter hours of undergraduate courses were also gathered in this way for the purpose of comparison and analysis.

To determine the economic understanding of the experimental and the control groups, the Test of Economic Understanding was used. In order to determine whether the difference in mean test scores for the various groups were real differences, or may be explained away in terms of chance fluctuations in sampling, analysis of variance of unequal groups in a two-way classification was used. When differences were found, Fischer's tests were used to discover in which groups these differences existed.

FINDINGS: Hypothesis I. Business education majors and social studies majors are statistically superior in economics to representative teaching majors without course work in economics.

No support for this hypothesis can be found in the findings of this study.

Hypothesis II. The business training of business majors and the social science training of social studies majors will make a significant difference in there mastery of economic understanding when compared with other majors having course work in economics.

No support for this hypothesis can be found in the findings of this study.

Hypothesis III. No significant differences will be found between the economic test scores made by students grouped according to age, sex, grade point averages in all courses, and grade point averages in economic courses.

In terms of sex, and age, each in itself, the findings do not support this hypothesis. Age and sex are factors related to the understanding of economics as measured by the Test of Economic Understanding.

In terms of grade point averages in all courses and grade point averages in economics courses, each in itself, the findings of this study support this hypothesis. Grade point averages in all courses and grade point averages in economic courses are not factors related to the understanding of economics as measured by the test instrument.

The results of this study indicated that greater effort should be made to strengthen the programs of business education and social studies in order to better prepare prospective teachers for their role of economic educators in the

secondary schools. These results also indicated that colleges responsible for the training of business education and social studies teachers give serious consideration to the development of a major and or minor program of study for students interested in economic education for secondary schools.

THESIS COMMITTEE: James G. Mamas, Chairman; Paul E. Ingwell

DATE OF COMPLETION: August 1966

ENGLISH

SYNTACTIC DIFFERENCES IN THE WRITING OF TWO GROUPS OF COLLEGE FRESHMEN WITH DIFFERENT ACT TEST SCORES

by Edith E. Anderson

PROBLEM: The purpose of this study was to determine the syntactic differences in the writing of two groups of college freshmen with different ACT test scores, using as the basis for analysis criteria established in the studies of Kellogg W. Hunt and Robert R. Potter. Hunt's study noted writing differences in groups differentiated on the basis of age, whereas Potter's study identified writing differences between groups of the same age differentiated on the basis of quality of writing.

PROCEDURE: The groups chosen for this investigation were enrolled in the freshman composition course at St. Cloud State College and were established by averaging the students' ACT English and composite verbal ability scores. The individuals achieving standard scores of 18.5 or below and 23.5 or above thus comprised the "low" and "high" groups, respectively.

For each subject, a one-thousand-word sample of in-class writing was taken and was analyzed according to (1) the standard procedure for writing analysis, (2) Hunt's T-unit, and (3) smaller syntactic elements.

FINDINGS: Many of the results of this study (especially those regarding the gross indices for analysis) ran counter to Hunt's, including some based on his smaller syntactic structures, such as the frequencies of nominal clauses in non-direct-object positions and verbs as nominals. In only a few of the more detailed areas were the results consistent, primarily in the modification of nouns by non-clausal elements.

Thus, the high group of this study, in writing more complicated nominals, indicated a greater ability with language than the low group, which seemed to depend too much on one particular type of structure, such as a clause, to express relationships.

On the other hand, when structures identified by Potter in his study of "good" versus "poor" tenth grade writing were employed in this investigation, a much higher correlation was found to exist between the studies than was true of this investigation and Hunt's. Thus, many of the syntactic elements and their relationships identified by Potter as typical of "good" writing were also found in the writing of students with higher verbal ability scores, elements such as (1) the classification of verbals according to their functions as adjective and post-noun modifiers and as objects of prepositions and verbs; and (2) the modification of one prepositional phrase by another.

SUMMARY AND CONCLUSIONS: The more detailed surface structure criteria for analysis employed by Potter and his investigator represent a more effective structuralist approach than Hunt's. However, in light of the demonstrated superiority of generative over structuralist theory, a generative-transformational grammatical study ought to be made to reinterpret structuralist findings from a generative point of view.

Grammatical analysis ought also to be more carefully correlated with generative rhetorical analysis, perhaps along the order of Francis Christensen's work. As performance models are developed in addition to grammatical models of "competency," those, too, will have direct relevance to syntactic differences in composition.

Finally, despite the small population of this study, it is considered significant that so many of the results correlated with Potter's. This may be an indication that once specific rhetorical elements are identified, a large population may not be necessary for the types of reinterpetive studies advocated. Nevertheless, both large and small studies are desirable, the former limited to one or two structures for analysis to establish specific rhetorical elements, and the latter concentrating on detailed structures and their interrelationships.

THESIS COMMITTEE: T. A. Hansen, Chairman; Paul E. Cairns

DATE OF COMPLETION: March 1969

BALDWIN'S QUEST INTO THE SELF

by Delbert E. Brobst

PROBLEM: The purpose of this study was to investigate James Baldwin's portrayal of the struggles and conflicts of the Negro and white American which may be extended to the quest of modern man into the self. The portrayal of the theme of the quest into the self was investigated in Baldwin's fiction and nonfiction including four novels, three collections of essays, and one collection of short stories.

PROCEDURE: The procedure was to investigate and analyze Baldwin's portrayal of the struggles of the American Negro, the conflicts of the white

American, the search for identity in religion and love, and the journey into chaos and the self. It was found that each of the aforementioned struggles and conflicts was, according to Baldwin, a necessary requisite for the quest into the self.

SUMMARY AND CONCLUSIONS: The study's conclusions were as follows: (1) Before the American Negro can have a meaningful future, he must look at what the past has given him--his religion as consolation and his music as an expression of freedom. But he must do more than keep his eyes on the past; he must determine his role in the present. (2) The white American has destroyed the Negro's history, and the white American has also destroyed his own identity. The struggle of the white and Negro American to achieve an identity is the predominant theme of Baldwin's writing. (3) In the case of most of Baldwin's fictional characters, the search for identity in religion and love is futile because the tormented searchers cannot take the preliminary step of discovering who they are. Neither divine love nor human love seems to provide the necessary identity. (5) The only hope which Baldwin offers in life's chaotic journey into the unknown is acceptance of one another with love. Only in this way can white and black alike arise from the chaotic void to achieve an identity, and thereby rescue their souls from total alienation from God, society and self.

THESIS COMMITTEE: Elizabeth Van Pelt, Chairman; Armand E. Falk

DATE OF COMPLETION: June 1969

SACRIFICE AND ATONEMENT IN THE PLAYS OF TENNESSEE WILLIAMS

by Vera Brill Cziok

PROBLEM: The works of Tennessee Williams are filled with actions that are horrible, with characters that are alienated, unfulfilled, and perverted, and with images that are indicative of terror and violence --- which almost beggar description. The average reader and viewer sees these actions, characters, and images as meaningless, depraved, and inherently evil. This is the typical view. Therefore, it has seemed that a study of these fictional elements is a legitimate means of exploring the surface and symbolic meaning of Williams' works to determine what he is trying to do, to determine whether he is representing an aimless view of an incoherent and evil world by dealing with violence, terror, and perversion. This problem could only be resolved by examining the actions, images and characters of his works with the purpose of answering this question. The aim has been to discover whether such fictional elements would, by symbolic interpretation, constitute motifs in a thematic pattern of meaning and how dominant such a pattern or theme would prove to be

in plays representative of the body of Tennessee Williams' works. Preliminary analysis suggested to the writer the hypothesis that Tennessee Williams' plays develop, symbolically, a dominant theme of sacrifice and atonement.

Although one of America's foremost and most popular dramatists, Tennessee Williams has been very much misunderstood, a misunderstanding resulting largely from the literal interpretation of his works and from a failure to realize that a symbolic interpretation of the religious ideas which seem to permeate most of Williams' writing may offer a truer estimate of him as an artist. It was the purpose of this study to clarify, through a close examination of three selected plays, representative of Williams' ideas and development, how he expresses his ideas that seem to develop the hypothetical theme of sacrifice and atonement.

PROCEDURE: Background study preparatory to this study included a brief exploration into the fundamental nature of the symbol and an investigation of the nature and use of the literary symbol in American literature. The preparatory study was expected to yield sufficient background information to further this proposed study --- a study of singular symbolic elements in certain works of Tennessee Williams.

Following a careful reading of works produced by Tennessee Williams from 1940 to 1960, the writer selected three major plays as representative of the playwright's development. Preliminary analysis indicated that the symbolic treatment of pagan and Christian doctrine, ritual, and religious figures in several of Williams' works presents certain types of characters, actions, and imagery which seem peculiarly marked by the elements of barrenness (a sense of alienation, incompleteness, unfulfillment), perversion, and violence. These fictional elements seemed to appear as motifs in a thematic pattern, symbolically embodying important elements of evil and symbolically involving the traditional elements necessary to man's redemption from evil. The elements of evil exposed in these motifs are quite apparent even in a literal interpretation, but the significance of these elements appears not to be truly realized until symbolic interpretation reveals the co-existence of the essential elements for the redemption from evil. The theme that appears to emerge through such symbolic interpretation is that of evil, guilt, and atonement --- with redemption achieved through sacrifice --- suggesting the theme of sacrifice and atonement.

In the exploration of the ideas leading to, or supporting this hypothetical theme of sacrifice and atonement, primary and secondary materials have been utilized. Central to the study were the plays, *Orpheus Descending*, *Suddenly Last Summer*, and *Sweet Bird of Youth*, and such early works suggesting the same theme as "The Purification," a one-act verse play, and "Desire and the Black Masseuse," a short story. In the process of searching for material offering the greatest understanding and support to the hypothetical theme, a study was made of religious myths, symbolism, and ritual, ancient and modern, especially of the rite of sacrifice, and the aspects of psychology and philosophy that

were significantly related to it. In the study of Williams' longer works, the characters, actions, and imagery were examined for elements of evil and elements providing the redemption from evil and for their symbolic significance in context. These were categorized into general concepts of evil such as (1) barrenness, (2) perversion, and (3) violence, and the symbolic but traditionally necessary elements of redemption found in the enactment of the religious ritual of sacrifice: (1) the need or desire for completion, purification or atonement, (2) the existence of sacrificial victim or scapegoat --- a "willing" victim, or one accused or proven a criminal, (3) the existence of the means or instrument of atonement, accompanied by scenes of emotional excitement and the letting of blood in one way or another, constituting "true" sacrifice.

FINDINGS: The characters, action, and imagery, distinguished by the elements of barrenness, perversion, and violence were found to constitute motifs which, symbolically embodying the elements traditionally necessary to the redemption from evil, establish the theme of sacrifice and atonement. These particular motifs embody symbolically the dual nature of man and his world --- both the elements of Good and Evil in their extreme forms. A symbolic interpretation of the motifs containing these opposing elements establishes that Williams' image of man is central to the theme --- man as both predator and victim. The motifs in this theme reveals that man, trapped by his own nature and by circumstances in a threatening universe, is soon infected by the elements of evil within himself and his world. Thus man, the victim of Evil, unable to triumph over it on purely human terms, seeks the higher happiness or ultimate Good in union with his God (or god) by yielding himself as the victim in the traditional, religious rite of sacrifice. The attempt to wrench life (eternal life) out of death (the surrender to violence and death in the symbolic ritual of sacrifice) is a moral struggle. This, and the fact that Williams' transgressing protagonists and heroines suffer a punishment more severe than their transgressions, reveals the moral nature of these plays.

SUMMARY AND CONCLUSIONS: The motifs developing the dominant theme of sacrifice and atonement in Tennessee Williams' works identifies the struggle of his victim - protagonists with that of all mankind. The struggle of Good and Evil in the hearts of men and women is a moral struggle. In his works Williams is found to say that the sins of the earth are its incompleteness, that the universe is fragmented, and that man is born into it incomplete. He shows that man's life is an attempt to compensate for the lack of wholeness he feels in himself. In every play, there is found a strong sense of disgust with reality, for everything human and of the earth is subject to corruption, to evil. The sole escape is by the shedding of human and earthly ties. Man seeks redemption and wholeness in the final act of surrendering to violence and death, thereby freeing himself of his past and securing eternal life and wholeness in union with his God. This, as the study of world religions has revealed to the

writer, appears to be the universal desire of all mankind. It is this moral struggle and universal desire which Tennessee Williams has expressed in his works.

THESIS COMMITTEE: Lewis C. Smith, Jr., Chairman; Paul E. Cairns

DATE OF COMPLETION: August 1966

TOWARD COLCHIS

by Gary Heinsel

PROBLEM: To satisfy the thesis requirement for the Master of Arts degree by writing an original work of literary art instead of the usual research paper. To demonstrate skill in using a particular literary form and fictional techniques in order to evoke an emotional response in the reader concerning a significant area of human affairs.

PROCEDURE: The literary form chosen was the novel, or, by length, a novellette; episodic in nature, composed of seven chapters, each of which is related to the others by way of continuing psychological and mythological motifs; and by their relative position in the overall Heroic monomyth which provides the undergirding structure for the entire work. Generically it is a novel of initiation, a *bildungsroman* which metaphorically describes the journey of a young man's life from one state of existence to another--from childhood to maturity, from innocence to knowledge.

FINDINGS: The manner in which this word is usually employed for a Master's thesis, here does not apply. There are no "Findings" as such in a creative writing project. Rather, the work is either 'found' successful in light of its purposes outlined above, or it is not. Of course, the writer hopes that it will be found successful.

SUMMARY AND CONCLUSIONS: Again, neither of these two terms apply to a creative writing project, except, perhaps, that the author in this case can conclude unequivocally that choosing to write a thesis of this sort should not be done lightheartedly nor by any student desiring to quickly complete his requirements for a degree. There is no more frustrating and time consuming labor under the academic sun, and yet, no one more rewarding.

THESIS COMMITTEE: Marvin Thompson, Chairman; Paul E. Cairns

DATE OF COMPLETION: April 1969

SHAKESPEARE'S USE OF RENAISSANCE THEORIES OF MUSIC AS CATHARSIS IN TWELFTH NIGHT, AS YOU LIKE IT, THE MERCHANT OF VENICE, AND THE TEMPEST

by David L. Pates

PROBLEM: The purpose of this study was to determine if there is evidence that music as it appears in the dramatic structure of *Twelfth Night*, *As You Like It*, *The Merchant of Venice*, and *The Tempest* is consonant with Elizabethan theories of the therapeutic effects of music on the audience.

PROCEDURE: Since this study is both historical and critical, a survey was first made of the literature relating to Renaissance doctrines of psychology which any educated Elizabethan would have been cognizant of. There was no attempt in this study to make a cause and effect analysis between this body of knowledge and the specific use of music in the plays, but only to give historical credence to Shakespeare's knowledge and use of music. The critical analysis of this study took its shape within the framework suggested by the modern critic Bernard Beckerman, who uses as his main point the idea that the Renaissance artist viewed the organization of his materials according to a 'multiple unity' scheme, one that is best typified in the image of the mirror. Multifarious events, or materials, were viewed as being independent but coordinate; that is, they were not viewed only in causal relationships. Applied to dramatic theory, this meant that any one of four elements might receive emphasis within the ebb and flow of the narrative. The use of music was then studied in relation to these dominant dramatic aspects: theme, plot, character, and language.

FINDINGS: Within the 'multiple unity' scheme of dramatic structure, Shakespeare chose in various plays and at various times to emphasize some emotionally tense aspect in the theme, the characterization, the plot, or the poetic language by using music within the text of the play.

CONCLUSION: In these four plays there is ample evidence to support Beckerman's theory that Shakespeare was faithful to the Renaissance vision of artistic experience--that various elements of experience are perceived as independent but nevertheless coordinate with other elements or events which appear within the whole artistic vision. The four major aspects are best understood as those elements which dominate at relative points in the ebb and flow of dramatic progression, a movement that is not limited to the linear line of the classical dramatic narrative. Further evidence shows that Shakespeare was able to achieve a desired effect relative to any of the four elements by using songs in the text of the play. Integrated within the context of the playwright's

dramatic purpose, the therapeutic use of music achieved those effects which the common fund of Elizabethan theory and practice supported.

THESIS COMMITTEE: Marvin Thompson, Chairman; Paul E. Cairns

DATE OF COMPLETION: June 1967

THE THEME OF LOVE AND CHARITY IN THE ABBEY PLAYS OF SEAN O'CASEY

by Lorraine Mildred Perkins

PROBLEM: Sean O'Casey, who is generally accepted as one of the most important modern dramatists, has been the subject of much critical commentary dealing with his plays' tragedy or comedy, their realism or fantasy, their political, social, or religious philosophy, and their special language. However, his plays contain another highly significant but often overlooked current, a theme important both to today's society and in O'Casey's philosophy. This theme is the existence of and need for love and charity. This theme was traced in the present study as both a motif and as a thesis in O'Casey's first four plays, commonly called his Abbey Plays because they were written for the Abbey Theater. The plays are *Shadow of a Gunman*, *Juno and the Paycock*, *The Plough and the Stars*, and *The Silver Tassie*.

PROCEDURE: The preliminary research was an investigation of O'Casey because an understanding of his life and philosophies made a valid analysis of his writing more nearly possible. The basic research involved close study of the four plays to find whether the theme existed. Action and dialog in the plays plus O'Casey's own comments were used as support wherever possible.

Secondary evidence from critical writing on O'Casey's plays and philosophies was also used to relate his beliefs to the theme because O'Casey often stated that his writing mirrored his beliefs.

FINDINGS: In each of the four plays, acts of kindness, charity, solicitude, and even heroic self-sacrifice by the Dublin tenement dwellers were found. These acts carried forward the idea that love and charity existed as a motif in O'Casey's plays even though the acts were interspersed among the more dominant scene of cruelty, comedy, tragedy, or selfishness. The acts of love and charity were most commonplace among the first three plays, though they also occurred in the fourth.

The second interpretation of the theme as a thesis that love and charity are needed in a world more given to war than to peace was most strongly brought out in *Silver Tassie*. That play showed powerfully the effects of World War I on soldiers who suffered during and after it. This same pacifist thesis was

also found in the climactic moments of the first three plays. For example, Minnie Powell was killed in an ambush when she attempted to save Davoren in *Shadow of a Gunman*; Johnny Boyle was assassinated during an Irish Civil War in *Juno and the Paycock*, and Bessie Burgess was killed accidentally by a sniper when she was caring for Nora during the Irish uprising of 1916 in *The Plough and the Stars*.

SUMMARY AND CONCLUSIONS: The existence of love and charity as a theme was found in O'Casey's plays both in the sense of a motif or recurring concept and in the sense of a thesis or central proposal. Further, it was found that the theme was O'Casey's basic philosophy of life and that he was fundamentally a humanitarian in his outlook. The inclusion of the theme of love and charity in his plays had three effects on his status as a playwright. Critics considered him Shakespearian in that he, like Shakespeare, not only juxtaposed humor and tragedy but also showed a general understanding of and sympathy for all his characters. In addition, he became accepted as a playwright of great universality, one whose concern for man with all his traits, were they cruel, kindly or ridiculous, was reflected in his plays.

THESIS COMMITTEE: Paul E. Cairns, Chairman; Lewis C. Smith, Jr.

DATE OF COMPLETION: June 1967

RELIGIOUS IDEA AND SYMBOL IN THE WORKS OF WILLIAM GOLDING

by Lorraine Ann Potuzak

PROBLEM: The purpose of this study was to determine, through critical analysis of William Golding's six novels, the religious implications in his work: whether he is a traditional Christian moralist, as many of his critics claim, and if not, the nature of his religious thought.

PROCEDURE: A preliminary review of general criticism was made to determine the existent critical views of Golding's religious thought. Subsequently, each of his six novels was read simultaneously with critical articles on that particular novel. Essays and interviews were then read to determine whether Golding's "official views" would clarify and corroborate the religious implications found in the novels.

FINDINGS: Though Golding believes in the Christian concept of original sin, he seems to reject the traditional Christian concepts of a supernatural benign Deity, Divine Grace, and the Atonement. He sees man as a divided creature, living in a split universe and having no choice but to live in both the material and spiritual worlds at once. Because man is a rational creature, fearing that

which he cannot understand, he tries to pin everything down with names and labels; he creates patterns, rational explanations, which give him purpose and direction. But because the spirit that moves within and between man is a mystery, inexplicable and never subject to analysis by the finite mind, any reduction of man's total being to a pattern denies the truth of his essential state. Therein lies the evil of modern man's civilization. Society, with its emphasis on the scientific method, places greatest value on that which is produced by the mind. It inculcates from generation to generation prejudices which trap the individual, which teach him to hate instead of love, which deny him free will and free expression of his heart. Man, therefore, though he has progressed in his ability to reason has not progressed in his ability to make value judgments. Because he has been taught to hate instead of love, the evil inherent in him inevitably erupts in war, in anthropomorphic religions based on fear, in injustice and cruelty.

CONCLUSIONS: Golding is not a traditional Christian moralist. He is, nevertheless, a religious novelist. He is ultimately concerned with man's understanding of himself so that man can see the truth of his being and thereby increase his humanity. He emphasizes in all six novels the mystery of life and the importance of man's intuition. The spiritual world (God) exists, but it is ultimately inexplicable: "God knows where God may be." Free expression of the spirit is indispensable to the development of man's humanity, but no individual's or group's expression of the spirit should become a pattern by which all men must live.

Golding does not belong completely to any school of literature or philosophy. However, because he believes in the spiritual world, which can be discovered, though not analyzed, through human experience; because he believes in man's capacity to match his material progress with moral progress, he can be called, philosophically, an evolutionary humanist.

THESIS COMMITTEE: Marvin Thompson, Chairman; Paul E. Cairns

DATE OF COMPLETION: July 1968

SWENCY A PLAY IN FOUR SCENES

by Arthur James Przybilla

PROBLEM: The purpose of this project was to recreate as realistically as possible the actual scenes that led up to a tragedy as reported in a newspaper story and present those scenes in the form of a dramatic script.

PROCEDURE: This project began because of morbid curiosity. A newspaper story concerning a man's violent death at the hands of his daughter and her

subsequent exoneration without any sort of trial piqued the writer's curiosity.

This curiosity led to a study of court records, welfare records in two states and numerous interviews with people closely associated with the situation as well as with other individuals. After exhausting all sources available, the writer compiled and studied the materials and discarded conflicting data. The remaining procedure was to choose the relevant scenes and write those scenes as I presume from my research they actually occurred, and organize them for dramatic effect.

FINDINGS: The play itself is the statement of the writer's findings. In summary the play deals with an incestual relationship between a father and daughter. The daughter who has guilt feelings and a protective attitude for her younger sister subsequently kills the father. The play deals with the situations that lead up to that killing.

CONCLUSIONS: The writer found that though truth may be stranger than fiction it is not necessarily as dramatic, at least not in the hands of an inexperienced playwright whose talent is at best questionable.

THESIS COMMITTEE: Paul E. Cairns, Chairman; Marvin Thompson

DATE OF COMPLETION: January 1969

A CRITICAL ANALYSIS OF JOHN CIARDI'S POETRY IN RELATION TO HIS OWN PUBLISHED CRITICAL THEORY

by Ray R. Rueter

PROBLEM: John Ciardi is generally recognized as having a position of authority in the fields of poetry writing and poetry criticism. He has written ten books of poetry. In the area of criticism he is most prominent as the Poetry Editor of *Saturday Review*. Because of his standing in both areas, the question arises as to whether Ciardi's poetry is in accord with the standards set by him as a critic. The purpose of this research is to examine his writings in both areas in an attempt to reach an answer to that question.

PROCEDURE: The research begins with a summary of Ciardi's critical standards as published by him. Selected poems are then examined according to those critical standards; poems which are examined are taken in chronological order. A summary of findings follows.

FINDINGS: The poetry of this research are, briefly, that in his poetry of the 1940's and 1950's Ciardi very often was not equal to his own stated critical

standards. A frequent reason for the failure to meet his own standards is unintelligibility, which is defined as the poet's insufficient thought or preparation for his poem. His poetry of the 1960's would generally meet with his critical approval.

SUMMARY AND CONCLUSIONS: The Anne Morrow Lindbergh controversy, which is recounted within this research, is deemed a major reason for Ciardi's rise in poetic quality. It is suggested in the research that the Lindbergh matter caused Ciardi to do some organized thinking about his critical standards. This thinking seems to have had an effect upon his poetic composition.

Ciardi has written much about his theories of criticism. Much of the authority for this research is found in only one book and three essays written by him. They are *How Does a Poem Mean?*, "The Reviewer's Duty to Damn," "The Morality of Poetry," and "The Shock Reaction to Poetry." Other writings of his contain extensions or repetitions of concepts found in the book and the essays.

THESIS COMMITTEE: Paul E. Cairns, Chairman; Lewis C. Smith, Jr.

DATE OF COMPLETION: March 1967

TONTO

by Norman S. Stebner

PLOT: During World War II Johnny Cumming, the protagonist from whose viewpoint the story is told in a limited third person narrative, finds that a friendship initiated by Mama Sue, the mother of a Port Arthur, Texas family, has led to his becoming the "other son."

Mama Sue and her husband, Pops, have one son, Pete, remaining at home. Pete wants to go to sea, but Mama Sue is thankful he is too young. Furthermore, she wants Pete to attend college. After the war, however, Johnny arrives on a tramp tanker, the *Tonto*, and informs Pete that a wiper's job is available. Pete accepts; the *Tonto* sails on an extended voyage.

On a trip to England Pete becomes very ill. The *Tonto* heads for port only because of a water shortage. The captain, issuing orders from his habitual state of inebriation, had ordered the fresh water dumped in order to carry more oil. The port selected is without hospital facilities.

The port doctor administers shots to everyone except Pete. The doctor begins drinking with the captain and fails to treat Pete, obviously dying. The members of the crew refuse to sail fearing either typhoid or typhus, even though the fresh water supply has been treated with chlorine.

Pete dies. Johnny attempts to inform the captain of Pete's death. Johnny learns that the crew has agreed to sail for Philadelphia where the ship is to be fumigated. Pete's body is sent ashore on a launch.

Another crewman dies on the way to Philadelphia. The ship unloads at Marcus Hook under a temporary quarantine, broken by a lawyer who informs the crew they have an excellent case against the captain. Although the crew would like to get off, the articles require them to sail the ship to Mobile.

In Mobile Bay, another crewman dies. After a wait of three weeks, the Tonto joins the rest of the hulks in the boneyard. The ship is not fumigated, nor is any quarantine imposed. After being paid, most of the seamen manage to leave by taking a lifeboat, later abandoned near town.

At the bus station, Johnny and a fellow oiler, Juan Gerala, dupe a policeman into believing they have little money; the policeman allows them to board the bus. On the bus, Johnny informs Juan that the actual circumstances under which Pete died are "too stupid" to be revealed to Mama Sue and Pops. From New Orleans, Johnny continues alone.

In Port Arthur, Mama Sue and Pops do not question Johnny about Pete's death, nor do they hold him accountable. Rather, they welcome him as a returning son. Johnny realizes that they want him to be a substitute for Pete. Under those conditions, he cannot stay.

THESIS COMMITTEE: Edward Mitchell, Chairman; Paul E. Cairns

DATE OF COMPLETION: August 1965

THE OBJECTIVE CORRELATIVE IN T.S. ELIOT'S VERSE DRAMAS

by Gretchen N. Swanson

PROBLEM: Early in his literary career, Thomas Stearns Eliot wrote a number of essays on the Elizabethan drama which were to culminate in his attempt to develop a new kind of poetic drama for his own era. In one of these essays, "Hamlet and His Problems," Eliot initiated the use of a phrase which was to permeate the literary world. Maintaining that Shakespeare had failed to find an objective equivalent for the emotion of Hamlet, Eliot posited the following dictum: The only way of expressing emotion in the form of art is by finding an "objective correlative" in other words, a set of objects, a situation, a chain of events which shall be the formula of that particular emotion; such that when the external facts, which must terminate in sensory experience, are given, the emotion is immediately evoked.

The phrase, "objective correlative," denotes not only a formula for the expression of emotion in art, but a standard by which poetic drama can be judged. While considering this critical dictum, this question arises: In Eliot's later role as a playwright, to what extent did he employ this formula and to what extent did he succeed in expressing the emotions of his characters by means of an "objective correlative?"

PROCEDURE: The following procedure is used in this study: (1) Redefining the "objective correlative" by means of the illustrations provided by Eliot in his essay, "Hamlet and His Problems," in which the phrase in question first appears. (2) Applying the concept to each of Eliot's five verse dramas: *Murder in the Cathedral*, *The Family Reunion*, *The Cocktail Party*, *The Confidential Clerk*, and *The Elder Statesman*.

FINDINGS: Eliot as a dramatist did use the three facets of the "objective correlative," namely the "situation," the "chain of events," and the "set of objects," in a most distinctive way. He adapted the "situations" he found in ancient myths to his use, always choosing those myths which centered around some sort of inner struggle. Each of the plays, with the exception of *The Family Reunion*, has a "chain of events" which serves to motivate the expression of emotion by a major character who is involved in this struggle. The "set of objects," which can be interpreted as a pattern of images, heightens the emotional intensity of the drama when used successfully. The images may be either verbal images or characters who function as images. However, the verbal images become increasingly sparse in the three final plays.

SUMMARY AND CONCLUSIONS: When judging Eliot's success as a dramatist by his conformance with his own critical standard, the "objective correlative," one must conclude that his first attempt was the best. The "situation" embodied in the story of Thomas a Becket in *Murder in the Cathedral* lent itself well to the ritual structure Eliot adopted for the "chain of events." The pattern of images is well integrated with the "chain of events" and adds a poetic richness lacking in the subsequent verse dramas.

THESIS COMMITTEE: Paul E. Cairns, Chairman; Marvin Thompson

DATE OF COMPLETION: August 1968

A COLLECTION OF POETRY: OF STEADY WINDS

by Lowell Louis Swisher

PROBLEM: It was the problem of this thesis to express in poetry the evolving and maturing philosophy of a questioning individual in contemporary American society through the stages of initial questioning, rejection, cynicism, despair, and finally, resignation.

PROCEDURES: It was necessary to develop a framework of ideas and experience through which to express this evolving and maturing philosophy. In addition, it was necessary to develop characters for the experiences and speak-

ers or voices for the ideas. Moreover, it was necessary to develop a language of poetry suitable for the nature of the experiences, ideas, and the enveloping philosophy. Finally, poems were written in the order of the development of the philosophy, although there was some overlapping in writing for stages one and two and later for stages two and three.

FINDINGS: It was found that an initial poetic statement, a prologue, was necessary in order to establish a tone and a focus for the project. This writer found that poems were written best when the writing began with an image, a situation, or an experience, and when the tone and the philosophic expression developed with the poem. In addition, it was found that free verse was the most suitable language to use with an imagery both of concrete natural objects and of abstractions, and also with many traditional devices, such as alliteration, assonance, and internal and end rhyme. Finally, it was found that the tone of the poems conveyed both the philosophy and the impact or effect more than did the specific experience or idea.

SUMMARY AND CONCLUSIONS: In sum, this project represents a poetical statement of man's contemporary problems of existence. The composite persona presented matures by experience and through questioning. The language of the poetry seems flexible enough to express effectively ideas, emotions, and attitudes. Conclusions about the work in relation to the effect and success of the poetry is a matter of taste and comparative critical opinion.

THESIS COMMITTEE: Paul E. Cairns, Chairman; James Lundquist

DATE OF COMPLETION: August 1968

THE NATURE OF MAN IN PARADISE LOST

by Ludmila A. Voelker

PROBLEM: Milton explicitly stated that his purpose in writing *Paradise Lost* was to "justify the ways of God to men." The question comes to mind: what kind of man was Milton thinking about? This study attempts to discover Milton's concept of the nature of man and to distinguish, if possible, how those characteristics parallel medieval and Renaissance thought.

PROCEDURE: The study was accomplished in four steps. An analysis of the lines of *Paradise Lost* was undertaken as the basis of the study. All lines which showed the characterization of Adam and Eve or which in any way illustrate the ideal conception of man were noted. A historical study then was made of the prevailing general ideas in the Middle Ages and the Renaissance regarding man and his role in the universe. Next, the critical literature on

Milton and *Paradise Lost* was studied. Finally, a comparison was made of the idea of the nature of man as exhibited in the Adam and Eve of *Paradise Lost* and the Adam and Eve from two literary analogues of the Renaissance. The works used were *The Devine Weekes and Workes* by the French writer Guillaume Du Bartas, a Hexameral epic published in 1578 and translated by Joshua Sylvester in 1605; and *L'Adamo*, by Gio. Battista Andreini, an Italian play published in 1613. The Hayley-Cowper translation was used for this study.

FINDINGS: Many of the ideas of the Middle Ages were synonymous with those of the Renaissance. The greatest difference of importance in a study of the nature of man lay in the Humanist tradition of the Renaissance which gave much importance to the individual man. Although there was a correspondence of ideas about man in the three literary works used in the study, Du Bartas appeared to be less influenced by the Humanist tradition than were Andreini or Milton.

SUMMARY AND CONCLUSIONS: Milton's depiction of Adam before the fall is in the medieval tradition of adaption, acceptance and obedience. As the characterization progresses, Adam is shown to become an individual who desires to act independently of established tradition. After a brief interval in which Eve preceded him in succumbing to the temptation, Adam too falls, and after a struggle in which he attempts to assure his identity, he emerges as a dynamic man who will make his way in a new world. He becomes characteristic of man of the Renaissance.

A comparison of Milton's Adam to the Adam of *The Divine Weekes* and *L'Adamo* and to the ideas of man recorded in history has shown that Milton did indeed reflect the ideas of the nature of man which were prevalent in his time. However, as a more original and artistic poet, Milton's development of those ideas is superior to that of the analogues.

THESIS COMMITTEE: Lewis C. Smith, Jr., Chairman; Marvin Thompson
DATE OF COMPLETION: July 1968

THE DEVELOPMENT OF WALLACE STEVENS' IMAGERY

by Elena D. White

PROBLEM: The purpose of this study is, through readings of individual poems selected from Stevens' successive books of poetry, to try out the hypothesis that focusing on the imagery (rather than attempting to systematize the thought expressed in the whole canon) is a good approach to responding to the poems; to describe Stevens' imagery at different stages of his career; and to assess the development as well as consistency of his style in imagery.

PROCEDURE: The text for this investigation is the six books of poetry as they appear in final form in Stevens' *Collected Poems*. Selection of poems to be interpreted is determined by the length of the poems and by some loose classifications of the contents of the "pictures" developed by the images in each poem. Since the main concern is with the nature of the imagery rather than with Stevens' most thorough presentation of ideas, and since the long poems such as "The Comedian as the Letter C" and "Notes Toward a Supreme Fiction" have received so many detailed commentaries, the shorter poems are chosen here. The criteria for placing the poems in categories are point of view, dominant or controlling images, and characters. To begin with, the following categories are discussed: scene description, scene with character, dominant image, anecdote, and relatively discursive poems. Another category for Stevens' associational technique is added in chapters four and five, and the anecdotal category, because it is decreasingly important and it merges with the associational form, is dropped in chapter five.

FINDINGS: The trend of Stevens' sensory imagery is from spontaneous physical and bright imagery that celebrated pleasure and delight as well as uncertainty and searching in *Harmonium*, to the often turbulent and generally sombre physical imagery that is often accompanied by more explanation in *Ideas of Order*, to the still more theoretical desire to see physical appearance anew, plainly, washed clean of old metaphors and even to transcend language in *Parts of a World*, *Transport to Summer*, and *The Auroras of Autumn*, to the most successful representation of abstract ideas and ideals by fairly general but concrete nature imagery of rivers, ponds, mountains, leaves, plants, and rock in *The Rock*. Other kinds of imagery that are explored and compared are the images of inner experience (dream, memory, and imaginative death images), images reflecting the world of art, characters or masks as images, traditional images, and relatively abstract images.

CONCLUSION: Familiarity with Stevens' imagery has led to a better understanding and more sensitive response to his poems than would be possible if one were to try to abstract some philosophical ideas from the poetry with little reference to the imagery. The imagery evokes changes in tone from the bright exhilaration and sometimes brashness of *Harmonium* to the sombreness and turbulence in the middle period, to the later more subdued tone of recurrent memory images leading to the final mood of stoicism in the face of death by one who loves experience of the natural world. The conclusion that the poetry becomes increasingly abstract is reached again but with some complex qualifications. The kinds of imagery listed above were found to be fairly constant, but their use in poems gradually changes. In the later poems Stevens chooses images associationally to evoke various feelings about an aphoristically stated abstraction. The total effect is not to picture a scene in an individualistic way as in the earlier poetry but to make the reader a witness to the

workings of the poet's inner imagination as he thinks about experience, memories, and aesthetic ideals in poetry.

THESIS COMMITTEE: Paul E. Cairns, Chairman; Marvin Thompson

DATE OF COMPLETION: March 1968

STRUCTURAL MOVEMENTS IN THE SHORT STORIES OF JAMES JOYCE

by Mary T. Yurkovich

PROBLEM: The problem was to determine whether or not the short stories of James Joyce, published as *Dubliners*, were unified by structural devices, and if so, whether or not those devices contributed to the unity and meaning of the book as a whole.

PROCEDURE: All critical commentary on *Dubliners* was examined for any information on structure; Joyce's own comments on structure were also considered. The stories were carefully examined for structural similarities. Ten of the fifteen stories were chosen for detailed analysis. These were, "The Sisters," "An Encounter," "Araby," "Two Gallants," "Counterparts," "Clay," "A Painful Case," "Ivy Day in the Committee Room," "Grace," and "The Dead."

FINDINGS: The stories were found to be structured around several movements. The movements of growth, of decay, of eastward direction, and of westward direction were examined. These movements were found to lead to the epiphany or revelation of each story's meaning. The structural movements were found not to be evident unless the stories were examined as parts of a larger whole.

SUMMARY AND CONCLUSIONS: Structural Movements were found to underlie all of the stories of *Dubliners*, to unify them, and to contribute to their separate meanings as well as to their meaning as a whole. These movements also indicated an emphasis on spatial structure rather than on chronological structure.

THESIS COMMITTEE: Lewis C. Smith, Jr., Chairman; Paul E. Cairns

DATE OF COMPLETION: August 1967

GEOGRAPHY

COMPARATIVE ASPECTS OF TWO METROPOLITAN SUBURBS

by Alec Dupay

PROBLEM: The purpose of the study was to explore the process of urbanization as it is revealed in the geographical characteristics of two Minneapolis-St. Paul suburbs, Columbia Heights and Coon Rapids. The study involved (1) a comparison of their areal growth; (2) a disclosure of their geographical differences and relationships to the metropolitan area; and (3) an analysis of certain community phenomena to illustrate the impact of the urbanization process upon both suburbs.

PROCEDURE: Much of this study involved observation and reconnoissance of the urban phenomena in both communities. Pictures and maps are included to illustrate different geographical features. Other data were chosen from records and publications from both suburbs, the Census Bureau, and other governmental agencies.

Prior to the section containing the community comparison, Chapter I was devoted to illustrate the dynamics of metropolitan growth in the United States, particularly at the city periphery.

FINDINGS: The processes of urbanization do not remain constant with the passage of time, nor do they have an identical impact in all suburban areas. As a first line suburb that incorporated in 1898, Columbia Heights has been closely tied to Minneapolis throughout its development. Its growth was precipitated by the streetcar line that was extended beyond the central city borders. Consequently, but on a small scale, it exhibits some central city characteristics such as street pattern, industrial development, and deteriorated housing.

Coon Rapids' development, since 1950, reflects the more recent responses to suburban living. Whereas the older suburb relied on Minneapolis for urban services, Coon Rapids, which was a rural township for over fifty years, relied on Anoka City for its services. Attracted by the site features, builders leap-frogged the land adjacent to the built-up areas and constructed hundreds of single-family homes in island communities. Analysis of the population data reveals a rapid increase, especially in the under fourteen year age group which makes up fifty per cent of the community's population.

SUMMARY AND CONCLUSIONS: Columbia Heights is over ninety per cent built-up, consequently it will not anticipate any significant changes in its

growth pattern from what is observable today. The fringe suburb, Coon Rapids, is contending with inherent problems of leapfrogged communities such as inadequate sanitary sewers and educational facilities. Because of its location at the periphery of the expanding functional city, it has an opportunity to take advantage of future urban trends. Since only twenty-five per cent of its land area is built-up, it can offer lucrative sites to firms that may want to locate away from the inner city congestion.

THESIS COMMITTEE: Carmen W. Harper, Chairman; R.G. Riggs

DATE OF COMPLETION: July 1968

GEOGRAPHIC ASPECTS OF AIR FREIGHT IN THE ECONOMY OF MINNESOTA

by George Becker Erickson

PROBLEM: It is the purpose of this paper to determine: (1) the amount of air freight that is handled in the Twin City Metropolitan area and, where possible, in other Minnesota cities; (2) interstate and intrastate connections of air freight companies; (3) the geographic origins and destinations of air freight; (4) the kinds of merchandise and their uses; (5) the value of the merchandise; and (6) the role the air cargo industry plays in the economy of Minnesota.

PROCEDURE: Much of the data used in this study were obtained from a questionnaire sent to about 250 business and industrial firms located in the more urbanized areas of Minnesota. The responses provided most of the answers to the problem; however, for background material and additional statistical information on the air transportation industry other sources had to be investigated. These consisted of various Civil Aeronautics Board--Federal Aviation Agency publications, reports of the Civil Aeronautics Board--Federal Aviation Agency publications, reports of the Minneapolis-St. Paul Metropolitan Airports Commission, individual airlines companies, Minnesota Railroad and Warehouse Commission and trade publications.

FINDINGS: Records relating to the volume of air cargo traffic handled at all of the airports in Minnesota that receive certificated route air carrier service show that air cargo transportation in Minnesota has been experiencing substantial growth since the initiation of record keeping in the mid 1940's. Outbound shipments of air freight from the Minneapolis-St. Paul International Airport increased by 1336 per cent from 1948 to 1966 while passenger departures increased by only 557 per cent during the same period. Though handling a very small percentage of the total of commodities moving in intercity traffic in the United States, air transportation volume has increased 5600 per cent

from 1940 to 1965 while the share moved by rail and water transportation has actually declined.

Business firms in Minnesota carry on trade by air with nearly all of the states in the United States and with most of the major nations of the world, exceptions being the Soviet Union and Communist China. Trade commodities include nearly every item that is produced in Minnesota and those items from out of state that are needed by Minnesota business and industry.

Generally the users of air cargo transportation reported that they used air only on an emergency basis and that it made up a small part of their total of transportation costs. The consistent users were both shippers and receivers and almost 50 per cent of the respondents used air at least once a day. More than 90 per cent of all air cargo moves as air freight and speed is the primary factor in its use. Centralization of the industry in the Minneapolis-St. Paul Metropolitan area is reflected in the volume of air cargo traffic generated there and the fact that seven major airlines serve the area.

SUMMARY AND CONCLUSIONS: The growth of the air transportation industry during the past two decades has permitted Minnesota business firms to establish direct contact with practically all areas of the world, probably to a greater extent than was provided by the opening of the St. Lawrence Seaway. The great load carrying capabilities of jet aircraft enabled airline companies to add a profitable freight carrying service to that already offered to passengers. This greater capability has resulted in conscious effort by the carriers to direct new business to the airways. The air freight forwarder can take some of the credit for increased air cargo transportation as in 1966 they were responsible for generating 28 per cent of all air freight in the United States. The not too distant future will see greater increases as even larger airplanes capable of carrying two to four times present loads will be put into service.

THESIS COMMITTEE: Carmen W. Harper, Chairman; Clair E. Daggett

DATE OF COMPLETION: July 1968

THE CENTRAL PLACE FUNCTIONS OF PRINCETON, MINNESOTA

by John Robert Miller

PROBLEM: It was the purpose of this study to investigate the functions which Princeton, Minnesota, performed for the exclusive use of the area immediately surrounding its areal limits. In particular, an attempt was made to determine what central place functions were present in Princeton, the size and extent of the hinterland which these central place functions served, the local

hierarchy of places in which Princeton played a part, and the deviations which these entities displayed according to central place theory.

PROCEDURE: The collection of data pertinent to the problem was divided into three parts. The first was a general review of literature pertinent to central place theory and pertinent to Princeton, Minnesota. The second was a canvass of all business and social establishments within the Princeton city limits. Here a representative of each establishment was interviewed and data obtained were quantified with the help of questions contained in an interview guide. The third step in collecting data was a series of eight traverses into Princeton's hinterland. Individuals along the traverse routes were interviewed to determine their support of the central place functions of Princeton.

The information found by these methods was organized into four sections. These dealt with Princeton as a central place, the hinterland of Princeton, the hierarchy of places near Princeton, and the deviations from central place found in the Princeton area.

FINDINGS: As a result of the research it was found that Princeton, Minnesota provided sixty-three central place functions which dealt with retail and wholesale trade, forty-three with saleable services, eighteen with non-saleable services, and ten with central place manufacturing functions. All of the establishments in Princeton derived some of their support from a hinterland outside of the city limits. The hinterland of Princeton was rectangular in shape and covered an area of 275 square miles. The population of the hinterland was 6300 persons. And, the wealth of the hinterland was based on agricultural production.

SUMMARY AND CONCLUSIONS: As a result of the findings it was concluded that Princeton, Minnesota, functioned as a central place and together with its hinterland it formed a nodal geographic region. Princeton was, by Christaller's terminology, a township center. However, its hinterland was also served by hamlets, a small state capital, and a regional city. Deviations from central place theory included an increased number of central place functions due to the tourist trade, a rectangular hinterland, the presence of non-productive families in the hinterland, and an incomplete hierarchy of central places.

THESIS COMMITTEE: Carmen W. Harper, Chairman; Paul E. Ingwell

DATE OF COMPLETION: December 1966

HISTORY

A SOCIAL AND ECONOMIC HISTORY OF ANOKA, MINNESOTA TO 1900

by Donald L. Hardle

PROBLEM: The purpose of this study is to present the economic and social history of Anoka, Minnesota, from the early exploration of the area to the beginning of the twentieth century.

PROCEDURE: Material for this study has been collected from the Minnesota Historical Society, the Minnesota State Archives, and the office of the Anoka Union.

FINDINGS: Anoka, as this study indicates, was not a unique pioneer community. The social and economic history of Anoka shows that its development paralleled and was closely tied to that of Minnesota and the nation from the 1840's to 1900.

SUMMARY: Fur, lumber, wheat, and flour were basic to the economy of Anoka. The fur trade created settlement of Anoka, but its permanency was short lived. Permanent settlement came in the 1850's, as the north-westward population thrust enveloped Minnesota. Anoka, having economic advantages, was among the first areas to be settled. Desirable farm land necessary for producing wheat and other agricultural products, important forests of white pine necessary for lumber production, water power for the flour and saw mills, and a location on the navigable waterways and trails all help to account for Anoka's early settlement. After statehood, the railroads came and Anoka was able to participate fully in the booming development of Minnesota. The town was able to combine its economic advantages to become a bustling manufacturing town built around lumber and flour. As the lumber resources of the upper Rum River gave out, the town's growth slowed, and greater attention was directed toward the establishment of the town as a trade center for the area.

Because of the nature of Minnesota's second great industry, lumbering, New Englanders were attracted to the region. Much of Anoka's professional leadership and lumbering and farming knowledge came from New England, especially Maine. New York was not far behind in providing professional people, skilled tradesmen, and farmers. The midwestern states also contributed their share, many being second generation New Englanders. Canada also sent many lumbermen and farmers. As the great European immigration spread over the United States after 1870, Anoka received mostly Swedes. Because of early New England influences, churches and schools were well supported. The Swedish immigrants were anxious to give similar support. Besides the churches and schools, the town also supported two newspapers. When faced

with problems such as financial panic and depression, grasshopper plagues, fires and floods, and the depletion of the Rum River pine, these people displayed their staunch and resilient character, overcame their problems and gave Anoka continued life.

THESIS COMMITTEE: John Massmann, Chairman; Paul H. Vaughter, Jr.
DATE OF COMPLETION: August 1965

THE UNITED STATES VS. PAUL KNAUR

by David L. Lake

PROBLEM: In September, 1943, a denaturalization action in the District Court of the United States for the Eastern District of Wisconsin, Milwaukee, Wisconsin, was brought by the government against Paul Knauer, Milwaukee, Wisconsin, a naturalized citizen of German descent, on the grounds that he entertained mental reservations when he took his oath of citizenship. The government attempted to prove Knauer's lack of allegiance by his associations and activities in connection with the German-American Citizen's Alliance and the German-American Bund. In July, 1944, the District Court decided to revoke Knauer's citizenship. The United States Court of Appeals, Chicago, Illinois, affirmed the District Court's decision and the United States Supreme Court accepted the case for review, but denied a rehearing. In 1948 Knauer was deported to Germany. The purpose of this paper is to survey the attitudes and actions of the courts, the press, and the public toward Knauer to determine whether the political climate influenced justice in this case. The study also becomes concerned with the validity and constitutionality of the denaturalization process.

PROCEDURE: Extensive use has been made of newspapers of the period, especially *The Milwaukee Journal* and *The Milwaukee Sentinel*. The records of the courts involved and other government publications concerning the case and the German-American Bund were examined. The resources of the Milwaukee City Library, the Wisconsin State Historical Society Library and the University of Wisconsin Library were used to gather material for the paper.

FINDINGS: The survey indicates that the pressures of the times did distort justice in this case. The exaggerated fear of a highly organized Nazi conspiracy to take over the United States, which later studies do not entirely support, seem to have influenced the courts' decisions. The principal witness in the case connected Knauer with high officials of the German government and apparently this was a most influential factor in ordering his denaturalization.

The witness produced no documentation of her accusations and her background created doubt as to the validity of her testimony.

The fault in this case, however, is not so much in the judgment of the courts but in the law itself. Denaturalization proceedings do not appear to be based on either sound legal principles or democratic tradition and should be eliminated.

Indications were that the press pre-judged the guilt of the defendant and one of its actions may have led to dismissal of the case under the present rules. Though there were examples of vigilante-type action by the public against the Bund and Knauer personally, public sentiment did not appear to be nearly as vitriolic as it had been during World War II.

CONCLUSIONS: Apparently Knauer had close associations with the German-American Bund, but the government did not provide satisfactory evidence of Knauer's connection with Nazi Germany nor any criminal activities in furtherance of Germany's cause. Knauer should have had the right to trial in criminal court. The Knauer case would seem to indicate that American society must reconsider its ideals of free expression or act more consistently in accordance with them.

THESIS COMMITTEE: Calvin W. Gower, Chairman; Daniel Younker

DATE OF COMPLETION: May 1968

A STUDY OF THE EARLY HISTORY OF THREE MINNESOTA MINING TOWNS

by Conrad A. Lautig

PROBLEM: Prior to the discovery of iron ore, the northeastern section of Minnesota was practically an uninhabited wilderness. This study demonstrates how iron mining brought about the beginning of three towns and also examines the general living conditions during the early years of Virginia, Eveleth, and Gilbert.

PROCEDURE: Books, pamphlets, and unpublished manuscripts, which are kept on file at the public libraries of Virginia, Eveleth, and Gilbert, were of great value. Several persons were interviewed and were very cooperative in recalling and describing some of their early experiences. The Mesabi Daily News, Eveleth News Clarion, and the Gilbert Herald were cooperative in making their sources available. The St. Louis County Historical Society and the Minnesota State Historical Society, St. Paul, also provided valuable sources of information.

FINDINGS: The three towns in this study were pioneer boom towns. This was typical of almost every mining town across the Range as they were first being developed. Although the growth of the towns was rapid, there were factors which hampered their development from the outset.

In Virginia, two fires within seven years all but wiped out the town. After each fire the people went ahead to rebuild and improve their city. In Eveleth an economic panic caused all but three of its residents to depart the same year it was founded. A few years later it was revealed that the original townsite was situated on one of the most valuable deposits of iron ore in the area. Therefore, Eveleth had to move to make room for mining operations. Gilbert had the fewest problems. It was founded because another mining town had to be moved.

In addition to each towns own setbacks, there were the normal growth problems of a frontier pioneer town such as: lack of good roads, poor transportation facilities, inadequate housing, and a shortage of drinking water and sanitation facilities.

The pioneer residents of the towns in this study were able to resolve the problems and hardships they were faced with through hard work and sacrifices. They turned a wilderness into a home for themselves and their children.

SUMMARY AND CONCLUSIONS: The era of history which this study covers compares to the rugged frontier life which was typical of most new areas west of the Appalachian Mountains. After a few decades however, the Mesabi Range acquired an altogether different reputation as public improvements, most of which were paid for by the mining companies, were soon in evidence in almost every town across the Range.

The study of the first decade of these three towns is a cross section of the early history of the Mesabi Range. This was a period of rapid economic, population, social, and political growth. The sudden development of this section of the state by mining companies and related industries stimulated growth beyond most expectations.

THESIS COMMITTEE: Calvin W. Gower, Chairman; Paul H. Vaughtner, Jr.

DATE OF COMPLETION: August 1965

CHIEF HOLE-IN-THE-DAY, THE YOUNGER, AND THE CHIPPEWA DISTURBANCE OF 1862

by Robert Salisbury

PROBLEM: In 1862, after the Sioux Uprising began, panic swept the northern edges of frontier Minnesota, as the Chippewa tribes, under the leadership of Chief Hole-in-the-Day, the younger, threatened to sweep the white population out of the upper Mississippi River valley. Accounts telling of Hole-in-the-Day

and the Chippewa Disturbance of 1862 are often contradictory in their condemnation and praise of this man and what he was.

The purpose of this paper is to present a more balanced perspective of the man and the events in which he was involved, by studying as many of the various accounts available as is possible.

PROCEDURE: The resources of the St. Cloud State College Library, the St. Cloud Public Library, and the Minnesota Historical Society were used to gather the material. Primary sources such as letters, diaries, government documents, and newspapers of the period were used as much as possible. The Minnesota Historical Society proved rich in this respect.

FINDINGS: In the middle of the nineteenth century, the United States acquired millions of acres of Indian land, in what was to become the states of Michigan, Wisconsin, and Minnesota. Involved in the ceding of much of the Chippewa land in this area was Hole-in-the-Day, the younger. Sensing his people's need to acquire the white man's civilization, if they were to survive, Hole-in-the-Day, at the government's request, agreed to settle on the land and serve as an example to his people. This program of transition for the Indians did not succeed, however. The breakdown of tribal government and the failure of the United States government to protect those Indians desiring to settle the land helped defeat the program. The liquor traffic, which proved so detrimental to the Indians, remained unchecked. The political appointment of Indian agents, who were, too often, corrupt or simply inept, proved harmful. Natural disasters, such as floods, grasshoppers, and poor crop yields discouraged many Indians, and they returned to the hunt and chase.

Hole-in-the-Day, also, contributed to the program's ineffectiveness. He played politics by discontinuing the Indian school, reducing the agency staff, which the Treaty of 1855 permitted the Indians to do, and using the money saved to increase annuity payments to the Indians. Without any staff, the agent found it impossible to control the liquor traffic, or to operate an effective program.

CONCLUSIONS: The Chippewa Disturbance of 1862 was created by the government's failure to provide an effective program of transition for the Indians, administered by capable, qualified agents, who understood the Indians' problems. The immediate cause of the disturbance was the government's failure to investigate charges of corruption against the Indian agent, and the agent's clumsy provocation of Hole-in-the-Day. Continued hostility, long after an amicable settlement could have been made, was caused by an uncompromising Commissioner of Indian Affairs, and Hole-in-the-Day, who sought to use a tense situation to extort as much as he could from the government. The result

for the Chippewa Indians was illwill and suspicion, and a loss of prestige for Hole-in-the-Day, the younger.

THESIS COMMITTEE: Calvin W. Gower, Chairman; Paul H. Vaughter, Jr.

DATE OF COMPLETION: July 1967

INDUSTRIAL ARTS

ANALYSIS OF INDUSTRIAL ACTIVITIES AS A RESULT OF INDUSTRY 321, ELEMENTARY INDUSTRIAL ARTS

by Lowell Dean Anderson

STATEMENT OF PURPOSE: The purpose of this study was to determine the degree to which the objectives of the course, Industry 321, Elementary School Industrial Arts, were being achieved. These objectives were: (1) to develop an awareness, understanding, and appreciation of the function, or organization, and utilization of handwork activities as an integral part of the educational offerings of the elementary school. (2) to gain practical experience, which will help the student develop skills, and acquire knowledges and techniques, which will enable him to effectively use handwork activities as a part of his elementary school teaching.

PROCEDURE: Teachers having received a baccalaureate degree from St. Cloud State College during the years 1961 through 1964 and having had no prior teaching experience were surveyed.

Response was made as to utilization of operations, room arrangements, teaching method, materials, and related information as having used, using, or desiring to use industrially-related activities.

Data was presented for the total population and subdivided into: (1) years of teaching experience, (2) school enrollment, (3) grade level, and (4) college instructor. Total responses were tabulated and shown by number and percentage of population in table form with explanatory text.

SUMMARY AND RECOMMENDATIONS: A greater percentage of the population desired to use operations of an industrial nature than had been used or were presently being used. Factors surveyed were: (1) increase in years' experience --decrease in use, (2) college instructors--negligible, (3) school size--negligible, and (4) groupings of grades one and two, indicating lower percentage of response, and grades three, five, and six, indicating higher response.

Room arrangement which was most frequently used--multi-purpose; most frequently desired--room adjoining the classroom or special room within the

building. Factors in this category were: (1) years of experience--negligible, (2) college instructor--negligible, (3) increased desire for multi-purpose area and junior-senior laboratory with increased enrollment, and (4) increased desire for junior-senior laboratory with advanced grades.

The method of instruction most frequently selected was the integrated method; specific period, second choice. Factors involved were: (1) two years of experience--integrated method preferred; three years--specific period, (2) specific period chosen more frequently by Instructor A's students (3) larger schools--desire for integrated method; smaller schools--specific period, and (4) grade level--negligible.

Materials used, in order of frequency, were paper, wood, metal (small response), silk screen paint, keene cement, leather, and plastic. Factors were: (1) increase in years of experience--increase in use, (2) instructors--negligible, (3) increase in enrollment--decrease in use, (4) grade level--negligible.

Related information topics, in order of frequency, were wood, metal, and crafts. Factors surveyed were: (1) increase in experience--increase in use, (2) instructors--negligible, (3) increased enrollment--increased use, and (4) increased use with advanced grade level.

Comments written which gave reason for lack of activities were: (1) lack of facilities and equipment, (2) no budget, (3) lack of room, (4) overcrowding, (5) lack of administrative leadership, (6) need for confidence, and (7) application.

Recommendations for further study were: (1) greater population, (2) small school enrollment grouping, (3) population having experienced inservice training, (4) activities to maturation of student, and (5) application to curriculum.

The author recommended that considerable work may be done in determining reasons for the present position of industrially-related activities in the elementary school.

THESIS COMMITTEE: Ray H. Larson, Chairman; R. D. Ryan

DATE OF COMPLETION: July 1965

MATURATION: AN EXPERIMENTAL STUDY OF COOPERATION AND RESPONSIBILITY WITHIN PEER GROUPS OF ONE YEAR'S DIFFERENCE IN AGE

by William James Lacroix

PROBLEM: The problem under study was to determine relative degrees of maturation between eighth and ninth grade industrial arts students. Those aspects of maturation which were studied were twofold: (1) group cooperation

within a peer group setting and (2) responsibility of the individual as it relates to himself.

Because of the insurmountable task involved if all characteristics of maturation were studied, it was necessary to limit the experiment to those two aspects.

PROCEDURE: Sample groups were selected on the basis of similarities in: (1) measured mean intelligence quotients, (2) experiences in industrial arts activities, (3) philosophy of the respective classroom teachers, and (4) proximity to the college community.

Both samples were socially grouped into committees which were delegated specific responsibilities. Each individual, committee, and sample was measured and statistically analyzed according to predetermined measuring techniques. Subsequent to the distribution of four related information assemblages, quizzes were administered to each sample. The responsibility of a committee presentation was evaluated by the regular classroom teacher and the investigator; resulting in a composite agreement of the committee's performance. The experiment was concluded with a final test comprehensive of the three week unit on wood lamination.

The four quizzes, the committee presentation, and the final test were logically examined to ascertain aspects and combinations of each which would statistically reveal the sought-after findings.

FINDINGS: Although the eighth grade sample showed more consistency in regard to basic capacity as indicated by intelligence quotients, the ninth grade sample was judged as having exhibited a greater tendency to cooperate within a peer group setting. Also, the ninth grade sample showed slightly more responsibility to and for his peer group while the eighth grade group was more responsible to and for himself. However, in matters directly and obviously concerning the individual, the ninth grade student showed more concern. With all relevant data considered, the ninth grade sample was deemed slightly more consistent in measures of responsible behavior.

SUMMARY AND CONCLUSIONS: Groups as closely related as only one year's difference in age exhibit significant and characteristic traits that must be understood and utilized by the teacher of such groups to make better the chances of successful teaching. A teacher must "know" the group in which his teaching takes place.

THESIS COMMITTEE: Ray H. Larson, Chairman; Alfred A. Lease

DATE OF COMPLETION: June 1967

CONSTRUCTION AND USE OF A SELF-SCORING TESTING DEVICE

by Zane H. Stein

PROBLEM: It was the purpose of this study to: (1) explain the design and construction of a testing device that would allow the student immediate knowledge of the correctness of his choice of answer to a specific test question; (2) test the relative effectiveness of two methods of test taking; and, (3) check student reaction to a new method of testing.

PROCEDURE: A self-scoring testing device of the punchboard type was designed and constructed for use in the experiment.

The experiment was designed to utilize the self-scoring testing device with students enrolled in the course "Industrial Arts for Elementary Teachers" being offered at St. Cloud State College. Three sections of the course were being offered the spring quarter of 1962 when the experiment took place. Two of the sections of the class, taught by the same instructor, were utilized in an experiment where the students were placed randomly by the registrar's office. One of these sections was designated the control group, the other, the experimental group. The control group took the tests required in the course by the conventional method, and the experimental group took them upon the self-scoring testboard.

In the second experiment, the remaining section of the class of students were equated, matched and divided into two groups. One group was designated the control, the other group, the experimental. The control group took the required tests by the conventional method and the experimental group used the self-scoring testboard. The required tests consisted of a pre-test, two unit tests and a final exam.

FINDINGS: It was assumed that there was no difference between the conventional method of testing and the testing done utilizing the self-scoring testing device. The Fisher's "t" test was used to determine the validity of the null hypothesis.

The null hypothesis was accepted in all cases in both experiments except in the case of one unit test where the test design itself seemed to cause the rejection.

The relationship between the number of attempts at answering the question and the number of correct responses was measured. It was found that there was a high negative correlation between the two groups of scores. This result would indicate that the lower the score the higher the probability of guessing at answers is taking place.

The student reaction to the self-scoring testing device was measured by a questionnaire in which the results indicated a less than wholehearted accept-

ance of the device on the part of most students. The most common complaint being the degree of frustration encountered when several questions in sequence were answered incorrectly.

SUMMARY AND CONCLUSIONS: The following conclusions were drawn from the data collected: (1) There is little difference between the two testing methods. (2) There is an advantage in using the self-scoring testboard as a time-saving device in regard to the learner. (3) The testing device could be utilized to present immediate feedback to the learner. (4) The testing device could be useful in test analysis and determination of guessing on questions. (5) The majority of students do not care to know how they are progressing on an examination. (6) The self-scoring testing device may best be utilized as an aid in giving review or check tests to students, rather than as a grade determining device.

THESIS COMMITTEE: Ray H. Larson, Chairman; William H. Kemp

DATE OF COMPLETION: March 1969

PLASTICS TECHNOLOGY: A COMPREHENSIVE PROGRAM FOR TEACHER EDUCATION

by Stanley Wood

PROBLEM: Plastics are forcing an increasing impact on our economy. With their industry demanding recognition as a major area in the United States, it appears that industrial arts education curricula should include a study of the materials, tools and processes associated with the plastics industry.

It is the purpose of this study to discern which phases of plastics fabrication are essential to portray a comprehensive picture of the plastics industry and to organize this "body of knowledge" into teaching content for the college level.

PROCEDURE: The procedure used in developing this program for teacher education was divided into four steps; (1) determination of areas of manipulation and fabrication essential to describe the plastic industry. This was accomplished by a letter survey of educators and experts in the plastics field and personal visits to towns, cities, plastics processors and fabricators; (2) identification and description of the major processes, tools and materials used in the plastics industry. These were based on plastics texts, periodicals, observation of industrial operations and first-hand experience in working with plastics materials. These findings were described in a condensed text written by the author; (3) development of a course of study which might facilitate

teaching the major materials, tools and processes of the plastics industry. A suggestive course of study was developed including objectives, course outline, student activities, and reference materials; and (4) delineation of a suggestive physical facility believed to be suitable for experimentation and practical application. In this final phase, the availability and cost of tools and equipment were investigated and considered.

FINDINGS: The findings indicated that: (1) plastics are fast becoming a leading industry in the United States; (2) few educational institutions offer plastics technology as part of their industrial arts education curricula. In Minnesota, only limited number of junior and senior high schools offer crafttype plastics courses and no college or university offers a comprehensive course; (3) the major industrial processes include: molding, casting, thermoforming, reinforcing and foaming processes. It was indicated by survey respondents that an understanding of these major processes and their related tools and materials would develop a comprehensive understanding of the plastics industry; and (4) materials and equipment suitable for equipping school plastics laboratories are available.

CONCLUSIONS AND RECOMMENDATIONS: That plastics technology should be considered an essential part of industrial arts education, that a study of its materials, tools and processes should be offered in all college industrial arts education programs in order to provide present and prospective industrial arts teachers with a basic knowledge of the plastics industry.

It is hoped that the comprehensive program outlined in this study may serve as a guide for construction of college level industrial arts curricula, and the equipping of their laboratories.

THESIS COMMITTEE: Perry G. Rawland, Chairman; Alfred A. Lease

DATE OF COMPLETION: May 1968

MATHEMATICS EDUCATION

AN EXPERIMENTAL COMPARISON OF TEXTBOOKS USED IN SEVENTH GRADE MATHEMATICS AT JOHANNA JUNIOR HIGH SCHOOL

by Donald Delroy Abfalter

PROBLEM: It was the purpose of this study (1) to determine which one of three modern mathematics textbooks is most effective for high ability seventh graders; and (2) to determine whether a modern textbook or a traditional textbook is more effective for low ability seventh graders.

PROCEDURE: The first step was to review that literature which pertained to the events leading to our modern mathematics programs and to review that literature which dealt most directly with the problem of selecting mathematics textbooks for high and low ability seventh grade students.

The next step was to randomly assign about two-thirds of the seventh grade students to high ability classes and the remaining one-third to low ability classes. Each high ability class used one of three different modern textbooks while each low ability class used either a modern text or a traditional text. The Sequential Tests of Educational Progress in mathematics were administered as a pretest, post-test, and retention test to measure achievement growth in mathematical insights and understandings. The analysis of variance technique and the F test were used to determine whether the differences between the two variances were significant. The t test was used when possible to make comparisons of interest.

FINDINGS: After analysis of variance had been conducted, and the F test used to determine whether the differences between the variances were significant at the .05 level of significance, and the t test used when possible, the results indicated that: (1) There were no significant differences between the STEP pretest means for either the high or low ability classes. (2) There were no significant differences between the achievement means for the high ability classes using textbooks by SMSG and Laidlaw; however, there were significant differences favoring the classes using SMSG over the classes using Silver Burdett. (3) There were significant differences between achievement means for the low ability classes using a modern textbook over those using a traditional text in one-half of the comparisons. (4) There were no significant differences between the retention means for the low ability classes and in only one comparison was there a significant difference for the high ability classes.

SUMMARY AND CONCLUSIONS: The findings indicated that the high ability students had the greatest achievement gain using textbooks by SMSG over those published by Laidlaw and Silver Burdett. The achievement means for SMSG differed significantly from those for Silver Burdett, but were not significant from those for Laidlaw. The low ability students had the greatest achievement gain using a modern textbook over a traditional text.

The experimenter concluded that the textbook by SMSG or Laidlaw would be good selections for the high ability seventh grade students at Johanna Junior High School. For the low ability seventh grade students, the experimenter concluded that the modern textbook tends to be more effective than the traditional textbook and would be a good selection.

THESIS COMMITTEE: Ernest Stennes, Chairman; Paul E. Ingwell
DATE OF COMPLETION: August 1968

SHOULD THE METRIC SYSTEM BE ADOPTED FOR GENERAL USE IN THE UNITED STATES?

by Elaine Alexander Adams

PROBLEM: Only two major systems of weights and measures are used in the world today--British and metric. In the United States proponents of the metric system have waged sporadic but losing campaigns against those who favor continued use of the customary units. With the passage by the Senate on September 20, 1965, of a bill requesting a three-year study of the practicability of conversion, it is apparent that the legislative branch of the government of the United States must once again decide whether to join the metric-based nations or to continue its membership among the few nations employing the foot-pound system of weights and measures.

PROCEDURE: The origin and development of both the metric and British systems are traced. Arguments for and against adoption of the metric system in the United States are discussed. Letters requesting their opinion on conversion were sent to various legislators and companies; their responses are presented. A report is made on the project undertaken in Willmar (Minnesota) Senior High School to determine whether students would have the same opinion on conversion after they received information on the issue as before they heard the lectures.

FINDINGS: The scientific community strongly favors adoption of the metric system. Educators express favor but do little to implement their views. Legislators historically have tended to maintain the inherited system of measures because of the vital importance and complexity of the decision to change. Of the companies and industries not employing the British system, some are operating metrically in accordance with their voluntary decision to do so, while others employ the decimalized inch.

The one far-flung industry which is fighting to preserve the inch is the Industrial Fasteners Institute. Members of this group remind the citizens of the United States that the inch has helped impressively to bring the United States to prosperity and a place of leadership in the community of nations.

SUMMARY AND CONCLUSIONS: Studies can be found to support both the advantages and the disadvantages of conversion; one can locate confirmation for whichever side of the issue he favors. The three-year study of the feasibility of conversion, approved by the Senate, is expected to come up before the House of Representatives in the present session. The need for such a study is urgent and long overdue.

THESIS COMMITTEE: Philip Youngner, Chairman; Arthur F. Nelson
DATE OF COMPLETION: August 1966

MUSIC

A SURVEY OF THE CORRELATION OF PARENTAL ATTITUDE AND BAND SUCCESS

by Wallace Edwin Erickson

PROBLEM: The purpose of this study was (1) to investigate the correlation of parental attitudes and the success of the band program; (2) to determine if some factor, such as the band director, could cause varying attitudes among the parents, consequently altering the success of the program; and (3) to resolve the question of the necessity for recognizing parental attitude as a factor in the success of the band and its program.

PROCEDURE: Questionnaires were sent to alphabetically selected parents of band students from nine West Central Minnesota public high schools. The responses were tabulated and correlated with Minnesota State High School League music contest results and the individual band director's opinion on the band's success.

FINDINGS: It was found that a positive correlation exists between parental attitudes and band success. The study also revealed that the opinion of the band director was not always in accord with the success of the band. Additional relationships were found between parental attitudes and the parent's opinion of the band's success.

SUMMARY AND CONCLUSIONS: The data indicated some observations which could prove useful to the music educator. No marked differences between the attitudes of the father and the mother were discovered. The data also indicated that parental music background has no correlation with band success. These observations indicate several areas that should be explored in depth.

THESIS COMMITTEE: Harvey R. Waugh, Chairman; Roger Barrett

DATE OF COMPLETION: February 1968

A PILOT STUDY TO DETERMINE THE FEASIBILITY OF FULL PARTICIPATION BY A BLIND VIOLINIST IN AN ORCHESTRAL MUSIC PROGRAM AND THE DEVELOPMENT OF THE MODIFICATIONS NECESSITATED BY SUCH PARTICIPATION

by Richard Edwin Skewes

PROBLEM: The purpose of this study was to determine the feasibility of full participation by visually handicapped students in an orchestral music program, and if such a feasibility was found to exist, to develop the necessary changes and modifications in the present teaching program necessitated by the inclusion of these visually handicapped students.

It was the writer's belief that it was possible (1) to teach an educationally blind student to play the violin; (2) for him to participate as a violinist in an orchestral music program; and (3) to modify the teaching program to facilitate such participation.

PROCEDURE: The review of the literature concerning all aspects of the visually handicapped person indicated clearly that, not only was the inclusion of the visually handicapped student in an orchestral music program as a violinist and a full participant entirely feasible, it was also practical and advisable.

FINDINGS AND CONCLUSIONS: In the judgment of the writer, it was concluded that (1) it was possible to teach an educationally blind student to play the violin; (2) it was possible for an educationally blind student to participate fully as a violinist in an orchestral music program; and (3) it was possible to modify the teaching program to facilitate such participation.

THESIS COMMITTEE: Harvey R. Waugh, Chairman; Roger Barrett

DATE OF COMPLETION: February 1969

PHYSICAL EDUCATION

AN INVESTIGATION OF SENIOR HIGH SCHOOL INTRAMURAL PROGRAMS FOR BOYS IN THE STATE OF MINNESOTA

by Donald Vathing Canfield

PROBLEM: In Minnesota there has been a great need for athletic activities in the senior high school based on participation. The problem exists because this need has not been satisfied in physical education classes nor interscholastic athletics.

PROCEDURE: The procedure of this thesis has been (1) to review literature on the subject, and (2) to determine the number of public senior high schools in Minnesota offering intramural programs and to investigate the existing programs. The criteria for this evaluation were based on the 218 returned questionnaires originally sent to 250 public high schools of Minnesota. The questionnaire was developed to evaluate the: (1) physical education instructional classes, (2) interscholastic athletics, and (3) intramurals.

FINDINGS: The review of literature indicated that a minimum program should consist of a team and an individual sport with a vigorous and less vigorous activity offered each season of the year. The survey disclosed that 83 per cent of the sophomores in the schools that responded received two or three periods of physical education classes per week. State law required two periods a week for sophomores, but none for juniors and seniors. The State Department of Education recommended five periods per week for all high school students.

The juniors and seniors were offered physical education classes in 28 per cent of the schools. The survey showed that approximately 25 per cent of the boys in the Minnesota high schools participated in interscholastic athletics during each season of the year. Thirty-six per cent (78 out of the 218 surveyed) of the public schools of Minnesota had intramural programs. Sixty-six per cent of the large-sized schools (more than 225 boys in grades 10-12) had intramurals, while 26 per cent of the medium-sized schools (90-225 boys), and 18 per cent of the small-sized schools (less than 90 boys) had programs. The small-sized schools that did have a program had a higher percentage of participation (77 per cent during the winter months) even though the large-sized schools tended toward a more comprehensive program.

SUMMARY AND CONCLUSIONS: More than half of the boys in the public high schools of Minnesota surveyed attended small-sized schools having less than fifty male classmates. The physical education classes followed minimum state standards rather than state recommendations. Interscholastic athletics served only a minority (25 per cent per season). Intramural activities were available to a minority of boys (36 per cent). The need for athletic activities based on voluntary participation was not satisfied through the physical education classes, interscholastic athletics, nor intramural programs. The intramural programs surveyed were generally minimal. This was made evident by the lack of diversified activities, lack of balance in the programs throughout the year, and lack of adequate policies governing the programs as compared to the policies of the programs advocated by authorities in the field.

THESIS COMMITTEE: George Serdula

DATE OF COMPLETION: July 1968

A COMPARATIVE INVESTIGATION OF SELECTED FEATURES OF THE ANOKA PUBLIC SCHOOL ELEMENTARY PHYSICAL EDUCATION PROGRAM AND THE SUBURBAN SCHOOLS OF MINNEAPOLIS AND ST. PAUL

by Ron C. Eastman

PROBLEM: It was the purpose of this study (1) to compare selected areas of the elementary physical education program of the Anoka, Minnesota, public schools with similar selected areas of the Minneapolis and St. Paul suburban public schools; and (2) to compare selected areas of the Anoka elementary physical education program with professional recommendations.

PROCEDURE: In doing this study, a questionnaire was sent to thirty-nine schools in the metropolitan area of the Twin Cities. Anoka-Hennepin Independent School District Number 11 was one of the thirty-nine recipients.

The questionnaire was fashioned to provide information that could be tabulated and placed in tables and figures. Where tables and figures were not feasible, the findings were covered in sentence form.

In order to obtain professional recommendations and relate them to the results of the questionnaire, extensive research was done in the literature of

the elementary physical education field. Pertinent information from these resources was used in the study whenever possible.

FINDINGS: From the questionnaire it was found that the majority of the elementary physical education teachers preferred a situation in which a special elementary physical education teacher worked with the classroom teacher. Many of the respondents to the questionnaire indicated that swimming facilities and instructional staff should be included in a comprehensive elementary physical education program.

SUMMARY AND CONCLUSIONS: The study pointed out that Anoka was one of the three largest school districts in the Twin City suburban area.

The Anoka district has more special elementary physical education teachers than any of the school districts surveyed, yet a need for even more special teachers seems apparent.

In the Anoka district, there appears to be a relaxation of administrative policy requiring the classroom teacher to observe the special physical education teacher and to utilize the learning process of the special teacher in sequential lessons. In order to have the full benefits of the special teacher, it is necessary that the classroom teacher faithfully observes and follows-through with the lessons presented.

Swimming instruction is an obvious failing in the Anoka district elementary physical education program. Though Anoka has qualified people to teach swimming fundamentals, existing facilities are not adequate for such a program. It is recommended that swimming instruction be included as an integral part of the over-all program.

It is important that the Anoka-Hennepin Independent District Number 11 practice continual critical evaluation and that effort be made to keep abreast of all new developments in the field so that each child in the district will enjoy the advantages of an enriching physical education program.

THESIS COMMITTEE: Roy J. Keller, Chairman; Francis A. Bleick

DATE OF COMPLETION: May 1967

AN APPLICATION OF COMPUTER-ASSISTED INSTRUCTION TO GOLF

by Henrietta Ann Gale

PROBLEM: A major problem in the American educational system is the increasing number of students demanding a high quality education. Physical education is no exception to this problem. It was the purpose of this study to determine if computer-assisted instruction could be used in the area of physical education, specifically golf, as a teaching aid and a possible solution to the problem of providing individual instruction. If a computer could be programmed to assume the task of drilling the student on golf fundamentals and etiquette, the human instructor could then work with smaller groups and give more individual instruction related to the physical skills of golf.

PROCEDURE: Computest, the source program used in this study, was modified to be applicable both to the IBM 1620 computer at Saint Cloud State College and the computer-assisted instruction golf program used in the study. The nine hole computer-assisted instruction golf routine was then written. A golf class at Saint Cloud State College was selected and divided into an experimental and a control group on the basis of pretest. The experimental group contained eight students; the control group, ten. The control group participated only in normal class activities; the experimental group took the computer-assisted instruction golf routine twice during the Fall Quarter of 1967.

FINDINGS: Since available computer time restricted the number of students who could participate, conclusive statistical results were not obtainable. It would appear, however, that the computer-assisted instruction golf routine was beneficial as a method of drilling students on golf fundamentals and etiquette. The results of the attitude questionnaire indicated that the students were pleased with this approach to learning.

SUMMARY AND CONCLUSIONS: The conclusion of this study is that it is possible to apply computer-assisted instruction to the instruction of golf. The technique used for this study, in which only one person could use the computer at a time, while adequate for preliminary experimentation, is not adequate for large-scale applications. Since, however, this study has shown that computer-assisted instruction in golf is feasible, the expense involved in the further development of computer-assisted instruction in golf is justified.

THESIS COMMITTEE: Frances A. Bleick, Chairman; Alyn N. Dull

DATE OF COMPLETION: June 1968

A STUDY TO DETERMINE THE NEED FOR AQUATICS IN THE ELEMENTARY PHYSICAL EDUCATION PROGRAM

by John T. Jambeck

PROBLEM: It was the purpose of this study to determine the need for including aquatics in the elementary physical education curriculum.

PROCEDURE: A mail-type survey was used to secure information on the subject. The sampling used were members of the Minnesota Swimming Coaches Association, 1967-1968. The questionnaire was mailed to 115 persons of which a total of ninety-three were returned. The questionnaire asked for both facts and opinions and was based on the following premises: (1) A swimming coach should be aware of the aquatic program in the school district. (2) Coaches of swimming should have certain attitudes toward aquatics based on their experiences.

FINDINGS: Based on those responding the following statements provide an analysis of the pertinent data presented. (1) Of the schools surveyed, eighty-five or 91.3 per cent, provided instruction in aquatics. (2) Of the schools surveyed, only five had a pool in the elementary school and had aquatics as a

part of the elementary physical education program. (3) The study indicated that 97.4 per cent felt a program in aquatics should be included in the elementary physical education program. (4) The majority of the coaches felt that the most significant reason for having aquatics on the elementary level was to learn a survival skill that could prevent drowning.

SUMMARY AND CONCLUSIONS: From the results of the study it would appear that aquatic instruction in the elementary physical education program is essential. This must be recognized by the schools. The survival skill from learning to swim could be the key reason for such an expenditure.

THESIS COMMITTEE: Frances A. Bleick, Chairman; John Kasper

DATE OF COMPLETION: August 1968

A PROPOSED PROGRAM OF PHYSICAL EDUCATION FOR GRADES ONE THROUGH FOUR, ORONO PUBLIC SCHOOLS

by Connie E. Sweeney

PROBLEM: The purpose of this study was to design a proposed program of elementary physical education which would facilitate the physical education teaching needs of the teachers and administrators of the Orono Elementary Schools.

PROCEDURE: A questionnaire was presented to the staff and administrators of the Orono Elementary Schools to obtain their thinking concerning the type of program assistance they felt would be most beneficial.

Current books, physical education curriculum guides, card files, and periodicals were reviewed to determine recent practices and trends in that area. An attempt was made to incorporate some of the most useful practices and trends into the proposed Orono program.

FINDINGS: A review of the questionnaire revealed the following: (1) a detailed physical education guide was not desired; (2) units to teach, length of units, progressions of skills to consider, and provision for flexibility should be provided; (3) that most teachers were unfamiliar with movement education and wanted the subject pursued further; and (4) in-service workshops would be valuable.

The review of the literature indicated that elementary physical education is gaining new prominence as a necessary and contributing discipline in the total educational picture of the elementary child. Teachers of physical education are urged to consider the individual child and to assist him in achieving the limits of his potential ability.

Movement education is identified as a promising approach to teaching physical education. It is a means whereby the teacher should place emphasis on child centered methods rather than teacher dominated techniques. It further helps the individual to identify both extremes of his personal capabilities.

The direction and assistance needed for elementary physical education is now available through the new state curriculum guide. The content of the Minnesota State Guide for elementary physical education is outstanding.

CONCLUSIONS: A program of elementary physical education is provided for the staff and administration of the Orono Elementary Schools which will facilitate program planning and content. Effort was made to incorporate the Minnesota State Guide and other sources into the program to avoid needless duplication.

In addition, a concerted effort was made to enhance the status of elementary physical education in the thinking of the Orono staff and administrators which would ultimately be reflected through the pupils of Orono.

THESIS COMMITTEE: Frances A. Bleick, Chairman; John Kasper

DATE OF COMPLETION: August 1968

SCIENCE

LIMNOLOGY CONDITIONS AND PHYTOPLANKTON PRODUCTION IN TWO ABANDONED GRANITE QUARRIES

by Keith Michael Knutson

PROBLEM: The existing limnological conditions and phytoplankton production rates were determined in two abandoned granite quarries (East Quarry and West Quarry), Sherburne County, St. Cloud, Minnesota, from 1 September 1966 to 19 June 1967. The purpose was to determine the (1) physical conditions, (2) the qualitative and quantitative chemical characteristics, and (3) the seasonal fluctuations of the plankton community with special emphasis on phytoplankton production. Considerable emphasis was placed on classifying these bodies of water.

PROCEDURE: All basin parameters were determined. Soundings with a weighted line, calibrated in meters, was used to construct hydrologic maps showing isopleths of each quarry. The deepest point of each quarry was selected for sampling stations. Light penetration was measured with a Secchi disc. Temperatures were measured with a thermister at 2 foot intervals. Water samples were collected with a Kemmerer water sampler. Chemical analyses were made according to standard methods from the surface to lower depths. The Winkler method was used to determine dissolved oxygen concentrations with 0.025 N phenylarsene oxide replacing 0.025 N thiosulfate.

Plankton was collected from 7 meter plankton net hauls throughout the survey to determine eutrophic zone standing crops. All plankton were counted with a Sedgwick-Rafter counting chamber. A net coefficient of 3.1 was determined by comparing Van Dorn water samples with vertical plankton net hauls. Phytoplankton production rates were determined by suspending light and dark bottles at 1, 2, and 4 meters for 24 hours. Chlorophyll concentrations were determined by colorimetry by filtering a desired aliquot of water through Millipore filters which were then dissolved in 90 per cent acetone.

FINDINGS: East Quarry was 1.27 acres, 20 meters deep, and had a mean depth of 8 meters. West Quarry was 2.05 acres, 15 meters deep, and had a mean depth of 7.3 meters. Small littoral zones were located on rock shelves in both quarries. The bottom of both quarries was very irregular with from 4 to 10 inches of organically rich (sapropel-like), partially decayed to finely divided plant remains. The bottom was found to consist of about 25 per cent volatile organic matter.

Both quarries developed a thermocline which seemed to fluctuate in a band of 2 to 9 meters. Ice covered both quarries 23 November 1966 and melted completely by 8 April 1967 (132 days). East Quarry was most transparent, reaching a maximum Secchi disc value of 9 meters. East Quarry averaged pH 8.0 on surface and pH 7.3 on bottom. West Quarry averaged pH 7.8 on surface and pH 7.1 on bottom. Both quarries have a mean surface bicarbonate alkalinity value of 123 mg/l, classifying the water as hard.

East Quarry froze out during the winter as evidenced by no dissolved oxygen and hydrogen sulfide gas under the ice. East Quarry is holomictic while West Quarry was apparently meromictic. The water in West Quarry was almost twice as hard as that of East Quarry. West Quarry sulfates averaged 157 mg/l while East Quarry averaged 44 mg/l for surface water. Carbon dioxide was present in surface water during the entire survey except during a short period in fall and spring. The ratio of calcium to magnesium ions was 3:1. No silica or nitrates were detected. Phosphates were greater in West Quarry (.42 mg/l).

The predominant plankton of East Quarry were *Daphnia pulex*, *Ceratium hirundinella*, and *Chaoborus americanus*. The dominant plankton of West Quarry were *Bosmina longirostris*, *Cyclops*, *Diaptomus*, *Oscillatoria*, and many Rotifera.

West Quarry's production rate for April, May and June, was 700 mg C/m²/day₂₄. The assimilation number 10gm O₂/gm chl/hr was detected for West Quarry. East Quarry values were not determined.

SUMMARY AND CONCLUSIONS: West Quarry is eutrophic and indicator algae indicate pollution. East Quarry is mesotrophic. All chemical analyses indicate a great abundance of electrolytes, but the apparently low concentrations of nitrogen was found to be a possible limiting factor in the environment. It is not known why the two quarries differ so much chemically and biologically. They are both approximately 75 years old and have similar, very reduced, watersheds. Eutrophication has been fast due to the carelessness of people using the quarries. It was suggested that West Quarry was apparently meromictic due to high biological activity in bottom muds with the liberation of large quantities of ions. A chemocline exists but the question remains; is it stable or temporary? Sufficient data are not available to support either hypothesis.

THESIS COMMITTEE: Max L. Partch, Chairman; Hugh Barker
DATE OF COMPLETION: August 1967

A STUDY OF SOCIAL AND COMPETITIVE BEHAVIOR IN THE RED-WINGED BLACKBIRD AND THE YELLOW-HEADED BLACKBIRD IN SHERBURNE COUNTY, MINNESOTA

by Joel V. Kussman

PROBLEM: It was the intent of this study to determine the activities of the Red-Winged Blackbird, *Agelaius phoeniceus arctolegus* Oberholser, and the Yellow-Headed Blackbird, *Xanthocephalus xanthocephalus* (Bonaparte), in a marsh habitat in Palmer Township, Sherburne County, Minnesota.

PROCEDURE: The two species of blackbirds were observed from June 15, 1966 until August 15, 1966 and from March 20, 1967 to August 26, 1967 on an eighty-five acre cattail marsh seven and one half miles southeast of St. Cloud, Minnesota. An investigation was made into the behavior of both species from their arrival in March and April until their departure in mid-August. The principle points of the investigation were: (1) the arrival of both species and the establishment of territories with respect to interspecific competition; (2) the period of pair formation from the acceptance of the females through mating and copulation; (3) nest site selection and nest construction; (4) nesting activities beginning with the laying of the eggs through fledging of the young; (5) the care of the fledglings by the parent birds; and (6) the fall movement from the marsh to the upland feeding areas.

FINDINGS AND SUMMARY: The red-wings and yellow-heads arrived in central Minnesota somewhat later than usual in the spring of 1967. The first red-wings were observed on March 24th, while the initial yellow-heads were not seen until the 21st of April. This late arrival was thought to be due to the unseasonably cold weather during the spring of 1967.

As establishment of territories began, intense interspecific competition was observed. The dominant yellow-heads drove the red-wings from the preferred nesting sites. Once permanent territories were established, however, the two species exhibited little interspecific activity the remainder of the nesting season.

During 1967 complete data was obtained for both species of blackbirds. The red-wings fledged twenty-eight young from ninety-eight eggs, a success of 28.6 per cent. The yellow-heads produced 220 eggs of which forty-three were hatched and fledged, a success of 19.6 per cent.

Upon completion of the nesting activities (mid-July) the blackbirds began grouping together in small flocks. By the 24th of August most of the yellow-heads had begun their migration activities. The red-wings began moving out of the marsh on the 21st of August and by the 26th of the month their migration was fully underway.

THESIS COMMITTEE: Alfred H. Grewe, Chairman; Max L. Partch, Charles W. Emery

DATE OF COMPLETION: July 1968

PHYTOCHROME ACTION ON GERMINATION OF SEEDS OF LACTUCA SATIVA L. VARIETIES BLACK SEEDS SIMPSON AND GRAND RAPIDS

by James Jingoo Park

PROBLEM: The action of phytochrome on germination of lettuce seeds is influenced by different germination conditions. Five variables were tested: (1) red and far-red light irradiation, (2) temperature treatment, (3) period of imbibition, (4) different after-ripening periods, and (5) variety differences.

PROCEDURE: The seeds were treated before incubation as follows: irradiated by red or far-red light at several temperatures, different durations of irradiation of red and far-red light at 25°C, repeated irradiations of red and far-red light at 25°C, different durations of dark-imbibition at 25°C, and different after-ripening periods.

FINDINGS: Grand Rapids lettuce seeds possess a high level of sensitivity to brief irradiations of red and far-red light. Black Seeded Simpson lettuce seeds, which are not light-sensitive at 25°C, became sensitive to brief irradiation when incubated 2 days at 35°C prior to irradiation. The lengthening of the duration of irradiation increased promotion by red light and inhibition by far-red light. The cold treatment enhanced red promotion and reversed far-red inhibition. Far-red inhibition was higher for the seeds exposed to far-red light after an exposure to red light than for those exposed to far-red light only. The inhibitory efficiency decreased with the lengthening of the dark interval between red and far-red irradiations. Dark imbibed seeds became sensitive to light shortly after being wetted. The dormancy of newly harvested seeds was removed by red light.

SUMMARY AND CONCLUSIONS: Light sensitivity of lettuce seed germination varies mainly with the duration of irradiation, previous irradiations, temperature changes, light and temperature interactions, durations of imbibition, and the after-ripening period. Results from this study indicate that the Pfr level induced by irradiation is not the only factor controlling phytochrome-mediated germination, but the input of phytochrome into the system and the behavior of Pfr under different treatments may control phytochrome-mediated germination. Dark-imbibed seeds become sensitive to far-red light shortly after being wetted; this indicates that some Pfr exists in dark-imbibed lettuce seeds.

THESIS COMMITTEE: Charles A. Rehwaldt, Chairman; Lester E. Lindstrom
DATE OF COMPLETION: December 1968

THE EFFECTS OF MAN'S PLANTING ON THE PIONEER STAGES OF SAND DUNE SUCCESSION

by Marlo Frank Putz

PROBLEM: The purpose of this project was to compare the pioneer vegetation and soil conditions of areas with less than 50 per cent plant cover within two major locations in the Sand Dunes State Forest, Zimmerman, Minnesota. The two comparative areas are in natural blowouts and plantation blowouts, those planted with trees.

PROCEDURE: Soils were studied by sampling five-foot corings and profiles were observed from zero to twenty-four inches. The vegetation was photographed and analyzed by a quadrat method along compass lines.

FINDINGS: *Aristida tuberculosa* was found to be a significant pioneer plant in the plantations but not in the natural blowouts. *Sporobolus cryptandrus* was much more abundant in the plantations. *Panicum villosissimum*, *Euphorbia geyeri*, *Cyperus schweinitzii* and *Ambrosia psilostachya* were abundant pioneer plants in both natural and plantation blowouts.

SUMMARY AND CONCLUSIONS: One may suggest that because the soils were uniform in both areas that alternate planting of grasses and trees would not only control the wind erosion but build the fertility of the soil faster. This could make the trees more productive and allow for multiple use of the land. The results of this research involves further study to determine if *Aristida tuberculosa* appears as the more significant pioneer species in plantations not studied and why.

THESIS COMMITTEE: Lester E. Lindstrom, Chairman; Ralph W. Gunderson
DATE OF COMPLETION: August 1968

WATERFOWL PRODUCTION AND USE OF A SELECTED TYPE 5 FEDERAL WETLAND MANAGEMENT AREA, IN POPE COUNTY, MINNESOTA

by Orlo Aldean Quame

PROBLEM: Few studies have been conducted on waterfowl production and use of wetland areas on a flyway, state, and county basis. However, according to all prior investigation no research of this type has been conducted on a specific Type 5 Federal Wetland Area purchased for waterfowl production and use.

The purpose of this study of a Type 5 Federal Wetland Management Area located in the Berg Tract, Blue Mounds Township, Pope County, Minnesota, was: (1) to show that waterfowl production and use existed within the purchased study area; (2) to determine the amount of waterfowl production and

use; and (3) to show that the Federal Wetland purchase objective, concerning waterfowl production and use for the study period 1967-68, was attained.

PROCEDURE: The United States Department of The Interior, Bureau of Sport Fisheries and Wildlife classified the wetlands of the United States into 20 types. Three of these types common to Pope County, Minnesota, are described as follows: "Type 3 - Shallow Fresh Marshes" soil normally waterlogged during the growing season, often covered with as much as 6" of water; "Type 4 - Deep Fresh Marshes" soil covered with 6" to 36" of water during the growing season; "Type 5 - Open Fresh Water" water of variable depth, located principally in glaciated country in the northern states, and in the Nebraska sandhills and Florida.

The term "Wetlands" as used in this research refers to lowland with shallow and sometimes temporary waters. These wetlands are often known by such names as marshes, swamps, wet meadows, bogs, potholes, and ponds. They usually have some form of emergent vegetation as a conspicuous feature. Wetlands might also be considered water areas which have an effect on the development of moist-soil vegetations so necessary to waterfowl and other forms of wetland wildlife.

FINDINGS: Observational records showed a waterfowl preference for the northwest area, narrows, of the study site for both 1967 and 1968. The dominant forms of aquatic vegetation were identified for all waterfowl feeding areas.

SUMMARY AND CONCLUSIONS: Research on the waterfowl production and use of the study site produced the following data: (1) production (young remaining on study site to flight stage) was 0.74, 1967 and 0.57, 1968, per wetland acre; (2) use, highest representative species total for a single sighting was 64 blue-winged teal; (3) loafing-log activity of 40.9 per cent for June through August 1968. The production and use data was obtained from the 36 acre study site, which consisted of 17.6 wetland acres containing 3.5 acres of open water.

THESIS COMMITTEE: Alfred H. Grewe, Chairman; Lester E. Lindstrom
Paul E. Ingwell

DATE OF COMPLETION: June 1969

THE INDUCTION OF TOLERANCE AND INTOLERANCE OF SKIN HOMOTRANSPLANTATION IN MICE BY USING 6-MERCPTOPURINE

by Cecil F. Ramsundar

PROBLEM: The purpose of this thesis is to determine (1) if the use of 6-mercaptopurine as a suppressant of the immunological response decreases the antigenic capacity of the host, causing the animal to become tolerant to homograft transplantation, and (2) if the immunologically competent cells from

an isologous donor are used to restore antigenic capacity, thereby resulting in the rejection of the graft.

PROCEDURE: The strains of C₃H and CBA mice were used, and each received reciprocal skin grafts, thereby acting as donor and recipient. The mice were anesthetized and portions of skin were removed and exchanged between the strains. Grafts were attached to the animals' skin with Justrite wound clips.

Groups I and IV received injections of 6-mercaptopurine for fourteen days. On the fifteenth day they were given injections of spleen cells.

Groups II and V received 6-mercaptopurine injections for fourteen days, but no spleen cells.

Groups III and VI were controls and so did not receive any treatment.

Daily observations of grafts and weights of mice were made. At the end of homograft survival the mice were sacrificed and spleen weights recorded.

FINDINGS: In Groups I and IV the animals lost weight. Mice showed a prolongation of homograft survival. Mean survival times were 19.36 and 20.6 days, respectively. The spleens were decreased in size, and the average weights were 0.057 grams and 0.056 grams, respectively.

The animals of Groups II and V also showed loss of weight. Homograft survival times were longer. The mean survival times were 23.8 days and 22.6 days, respectively. The spleens in these groups showed a more pronounced loss of weight. The average weight was 0.046 grams.

Groups III and VI indicated a gain in body weights of the mice. The homograft survival times were shorter than the other groups. Average survival times were 10.25 days and 10.83 days. The average weights of spleens were 0.080 grams and 0.078 grams.

SUMMARY AND CONCLUSIONS: The experiments demonstrated clearly that the mice which received only 6-mercaptopurine treatment had the longest homograft survival. Those which received 6-mercaptopurine and spleen cells showed a shorter survival time. The control animals showed the shortest survival time.

From the data obtained, it appeared as if the 6-mercaptopurine was able to suppress the antibodies of the host, thereby making them tolerant to skin homografts. On the other hand, those which received spleen cells were able to repopulate their antibodies, which resulted in a shorter homograft survival time.

THESIS COMMITTEE: Hugh Barker, Chairman

DATE OF COMPLETION: July 1967

BEHAVIOR AND ECOLOGY OF CANADA GEESE NESTING IN EAST CENTRAL MINNESOTA

by Edward Evan Starkey

PROBLEM: To study the productivity and behavior of Canada geese nesting in the Minneapolis-St. Paul area of east central Minnesota.

PROCEDURE: Nineteen nesting platforms were erected on Sunny Lake in January, 1968. Thirty-four geese were marked with plastic neck bands.

Nests were located by a thorough search of areas by foot, canoe, and airplane. After location, a nest was marked with a numbered stake and observed frequently.

Broods were observed five times a week. One newly hatched brood was captured and colored with brilliant cresyl blue. This was unsatisfactory since the dye did not penetrate the down.

Most behavioral observations were made at Carver Park. Productivity data were obtained from all areas studied.

FINDINGS: Most geese spent the winter in the study areas. Geese that migrate do not travel far since they are gone only two or three months.

The geese were sedentary during the winter. As spring approached, territorial strife increased and nest sites were selected.

A male snow goose paired with a male Canada goose at Sunny Lake. The snow goose acted the role of the male partner.

Females selected the nest sites. Most nests were built in open areas. Small islands and muskrat houses were the favorite nest sites. One nest was built in a fiberglass nesting dish, it was deserted during early incubation. No other nesting platforms contained nests. One nest was successfully moved onto a platform.

After hatching, goslings were held on the nest for about 24 hours. This may allow the goslings to "imprint" on their parents. The families sought out good cover when they first left the nest. Considerable brood mixing occurred.

Average clutch size was 5.4 eggs. Nesting success was 78 percent. Hatching success was 86 percent. Nest desertion was the most important limiting factor, although it caused the loss of only three nests. Five goslings died within 24 hours of hatching.

The potential productivity for all pairs was 110 young. Actual productivity was 83 young. Average productivity was 3.95 young per pair. This compares favorably with other similar studies.

Some hunting losses occurred at Sunny Lake during the fall of 1967.

SUMMARY AND CONCLUSIONS: The observations made during this study indicate that nesting populations of Canada geese in the Minneapolis-St. Paul area were generally successful breeding units during 1968. There seem to be no limiting factors, either external or internal, which at the present time will prevent these goose populations from growing considerably in the next few years.

THESIS COMMITTEE: Alfred H. Grewe, Chairman; Luther Brown,
John F. McCue

DATE OF COMPLETION: June 1969

FIELD TRIPS IN THE SECONDARY SCIENCE CURRICULUM WITH REFERENCE TO THE LITCHFIELD AREA

by Paul D. Styte

PROBLEM: It was the purpose of this study (1) to attempt to set forth suggestions on organization and techniques of the science field trip program; (2) to survey the community resources of Litchfield for the purpose of identifying those resources with field trip potential for use in the secondary science curriculum; and (3) to analyze each of the identified potential field trips to ascertain the major purposes they would serve, the desired approaches to be used and special features of the field exploration.

PROCEDURE: The investigator approached this problem by first reviewing the literature in an attempt to set forth suggestions on the purposes, problems, pros and cons and procedures in developing and conducting a dynamic and vital medium for learning in our schools of today. The next step was to make a general study of the community for the purpose of discovering the number and variety of resources that are available. After becoming acquainted with the area, a preliminary list of the potential field trip areas was compiled. It was then grouped into four main categories: (1) industries, (2) business establishments, (3) municipal services, and (4) nature studies.

Upon completing the preliminary study, an interview guide was designed to obtain information relative to each of the potential field trips found in the first three categories mentioned above. The fourth category, where the prospective site was an area or locality, also required a personal visit by the investigator.

After the data had been collected by the methods described, full attention was given to analyzing and compiling a record of the findings. The information was transferred to standardized forms to facilitate the reporting of results and then grouped according to areas in the science curriculum. They are as follows: (1) life science, (2) earth science, (3) physical science, (4) biology, (5) chemistry, and (6) physics.

SUMMARY AND CONCLUSIONS: The possibility of developing a quality program of field experiences for the Litchfield science curriculum is very real. The opportunities existing within the community are great in number and cover the major topics included in the present science curriculum. Willingness on the part of the public to sacrifice their time and the time of their employees, to contribute a part to the school curriculum, was very evident. Most business establishments and industries were eager to be given the opportunity to explain their particular product or service rendered and to create an interest in their field. If the public is willing to do their part by furnishing the community resources for use by the school, the schools should feel obligated to make the best educational use of these opportunities to give the student a practical, stimulating and worthwhile curriculum of study.

THESIS COMMITTEE: Harry H. Goehring, Chairman

DATE OF COMPLETION: April 1967

HISTOLOGICAL ALTERATIONS OF THE ADRENAL GLANDS OF WHITE RATS SUBJECTED TO OVERCROWDING STRESS

by Michael David Warman

PROBLEM: The purposes of this study were to identify the histological changes that occur in the adrenal glands of the white laboratory rats when subjected to overcrowding stress for a period of nine weeks, and to observe whether any of these histological alterations were reversible when some of the overcrowded rats were returned to a normal population density after a five-week period.

PROCEDURE: Twenty-four white laboratory rats were randomly grouped into three population densities. The control population consisted of one male and three females; the double population, two males and six females; the triple population, two males and ten females. The dimensions of each of the cages were 22" x 14" x 9.5". After the allotted times, the adrenal glands were removed, fixed in Heidenhain's solution, processed and stained with hematoxylin and eosin Y. Images of the serial sections were projected onto white drawing paper and the medulla and the three zones of the cortex were outlined, cut out and weighed to detect any overall area changes in the glands. Hypertrophy and/or hyperplasia was discerned by projecting the images of the sectioned glands onto a white sheet of paper on which a four-inch square was drawn. The camera lucida was employed to cast the image. The cell number was counted in randomly selected areas of the medulla and the three zones of the cortex. When the cell number remained the same in the area of the gland that expanded significantly, hyperplasia was inferred, while hypertrophy was directly measured.

FINDINGS: There were no significant changes in the adrenal glands of rats from the double population. However, all zones of the cortex in the glands of the rats from the triple population expanded significantly. The medulla in these glands expanded, but not at a significant level. The zona fasciculata displayed inferred hyperplasia while the zona reticularis exhibited hypertrophy. The cell number and size were not determined in the zona glomerulosa. The greatest expansion of all the zones occurred in the zona reticularis. None of the histological reversals in the recovery group were significant, excepting the cell condition in the zona reticularis changed from hypertrophy to hyperplasia.

SUMMARY AND CONCLUSIONS: The only change in the adrenal glands of the double population occurred in the zona reticularis, but its expansion was at a nonsignificant level. The triple population density affected all three zones of the cortex significantly and influenced a highly significant change when considering the cortex as a whole. The zona reticularis was found to be the most responsive to overpopulation stress stimuli. Opposite cellular changes accounted for the significant expansion of the two zones measured. The reversal of histological alterations in the glands of the recovery rats were negligible, excepting the cells of the zona reticularis displayed a distinct

reversal from a hypertrophic condition to one of hyperplasia. This suggests that not only does this zone respond the most to stress, but also is the first zone to atrophy when the stress conditions are alleviated.

THESIS COMMITTEE: Alfred J. Hopwood, Chairman; Vincent A. Johnson
DATE OF COMPLETION: June 1969

A STUDY OF SOME ECOLOGICAL ASPECTS OF THE MISSISSIPPI VALLEY POCKET GOPHER

by Denis P. Weis

PROBLEM: This study was initiated to determine the number of mounds erected by each gopher of a population during one year. The study attempted to relate the amount of gopher activity to weather conditions and to different seasons of the year. Gopher tunnels and food storage methods were also investigated.

PROCEDURE: The field work was carried out in Zimmerman Loamy Fine Sand of Palmer Township in Sherburne County in Central Minnesota. The pocket gopher population density of about six acres of idle farmland, which was divided into quadrats ten meters on a side, was measured. A combination of live trapping and removal trapping methods were used. Gophers were live trapped, marked by toe clipping, and released into the tunnels from which they were captured. After a month of live trapping, kill traps were used to remove gophers from the area. The ratio of marked to unmarked gophers caught in the kill traps was used to calculate the population density.

The mounds pushed up on the six acre study area were marked with numbered tongue blades. The location, size, and formation date of each mound was recorded in the appropriate quadrat on a map of the area. Each addition to the erected mound was recorded during later observations to the study area.

Three tunnel systems were dug out to observe their characteristics in the loamy fine sand and to locate food caches. The material from four food caches was identified, weighed, and examined during the study.

FINDINGS: (1) The estimated population of pocket gophers in the study area was ten gophers per acre. (2) 5,959 new mounds were pushed up in the study area during one year. (3) Although mound building apparently occurred throughout the year, fewest mounds were formed during the winter and peak activity was in the fall. (4) Mound building activity was directly proportional to the amount of rainfall. (5) Three-fourths of the mounds formed were added to at a later time. One mound was added to nine times during the year. (6) The most commonly stored food was grass stems. (7) Over ninety per cent of the food in food caches was cut into pieces ranging from one to six centimeters long.

SUMMARY AND CONCLUSIONS: One hundred mounds were pushed up for each gopher in the estimated population. The peak of activity occurs at approximately the same time that young gophers are dispersing. Gophers appeared to

prefer working in moist soil as indicated by the amount of rainfall; however, mounds consisting of frozen chunks were formed during the winter. This indicates gopher activity throughout the year.

The pocket gopher is a very difficult animal to study because it is a shy fossorial animal with the ability to learn to avoid traps.

THESIS COMMITTEE: Alfred H. Grewe, Chairman; Max L. Partch

DATE OF COMPLETION: June 1968

A COMPARATIVE STUDY OF VEGETATION AND SOILS IN ADJACENT SITES NEAR COLLEGEVILLE, MINNESOTA

by Norman Peter Zirbes

PROBLEM: The purpose of this research was to study and compare the soil and vegetational characteristics of a natural oak-maple-basswood forest and a planted coniferous forest on the property of St. John's University near Collegeville, Minnesota. The primary objectives were to provide an accurate description of the vegetation in the two major areas under study, and to attempt to determine whether or not these changes in vegetation might have resulted in demonstrable differences in the chemical and physical properties of the soils. The study was also expanded to include a study of the soil of a nearby cultivated field and an adjacent area vegetated by grasses.

PROCEDURE: The vegetation was analysed by means of quadrats 10 x 10 meters for woody vegetation and 1 x 1 meter for shrubs and herbaceous plants. Trenches were dug in each stand for profile description and for the collection of soil samples for laboratory analysis. Data were collected on texture, bulk density, pH, nutrient availability, permeability, waterholding capacity, and aggregate stability.

FINDINGS: Sugar maple and red oak are the most abundant trees in the deciduous forest with basswood being only a minor component. Sugar maple is also the most abundant seedling and sapling in the deciduous forest. White pine seedlings were common in the coniferous forest but, since the mortality rate was high, they seldom reached sapling stage. The dominant grass in the grassland is little bluestem.

The understory in both deciduous and coniferous forest bore a direct relationship to the density of the canopy produced by the overstory. Many areas were so devoid of light that few shrubs and herbaceous plants could survive. Wherever an opening occurred in the canopy, the number of species and their frequency of occurrence increased.

All soils were generally of sandy loam texture. Percentage of clay reached a maximum in the B horizons of all sites and was most pronounced in the deciduous sites. The water-holding capacity, permeability, organic matter content, and aggregate stability were all more favorable when the vegetation was primarily grasses. Nutrient level was also generally higher in grassland. Alteration of soil pH was generally affected by the unique process of litter decomposition. Coniferous needles were more acidic than deciduous and grass litter resulting

in soil supporting conifers to be more acidic. Soil pH generally increased with depth reaching a maximum in the C horizon of all sites.

SUMMARY AND CONCLUSIONS: Differences in the chemical and physical properties of the soil are due, at least partially, to the influence of the vegetation as well as to logging, reforestation, and cultivating. These changes can be attributed to the nutrient requirements and rooting habits of each individual species, and to the amount of organic matter returned to the soil. Since addition of organic matter was largely centered in the surface layers of the soil, broad differences could be discerned most easily in the A horizon.

THESIS COMMITTEE: Harold Hopkins, Chairman; John F. McCue

DATE OF COMPLETION: June 1969

SOCIAL SCIENCE

FACTORS RELATED TO THE SOCIAL PARTICIPATION OF YOUNG PEOPLE IN AREAS HOMOGENEOUS IN RELIGIOUS, NATIONALITY AND RURAL BACKGROUNDS

by Jessie D. Greenstreet Harper

PROBLEM: The problem was to determine which sociological factors were significantly related to participative attitudes, knowledge, and future action of young people in a homogeneous community.

PROCEDURE: A four-part test was administered to 336 graduating seniors in the three high schools in Stearns County, Minnesota that serve the rural German-Catholic community. Part I of the test secured information about the students' backgrounds, and parts II, III, and IV secured information about their participative attitudes, knowledge, and predicted future actions.

The chi square statistic was then used to secure desired information about the relationships between selected environmental factors and degrees of participative attitudes and predicted participative action. Five major hypotheses, comprising a total of seventeen subsidiary hypotheses were thus investigated.

The participative knowledge of the young people was secured through open-ended questions, and conclusions were made by subjectively evaluating individual responses.

FINDINGS: No factors were significantly related to the participative attitudes of the young people at the one per cent level. Two factors were significantly related to attitudes at the five per cent level: (1) education of the father beyond the eighth grade, and (2) at least one parent working outside the community.

Eight factors were related to the future participative action of the young people, six factors significant at the one per cent level and two significant at

the five per cent level. Those factors significant at the one per cent level were, in descending order of significance: (1) education of the father beyond the eighth grade, (2) the nonmanual, rather than manual or agricultural, occupation in the home, (3) some education by the father outside of Stearns County, (4) some education by the mother outside of Stearns County, (5) education of the mother beyond the eighth grade, and (6) at least one parent supporting a political party. Two factors significant at the five per cent level, therefore much less important in relation to future participative action, were (1) a home in the village, rather than in the country, and (2) less than two years of public school background, as compared to two or more years of public school experience.

Pertaining to participative knowledge, the findings were: (1) almost a third of the students had no knowledge of any local, county, or state problem, (2) the greatest share of the problems noted were of a very obvious or immediate concern, such as going to war, and (3) the majority of the students were pessimistic and unaware of their opportunities or social obligation to influence the outcome of social problems.

SUMMARY: First, far more factors were related to predicted participative action than to participative attitudes. Secondly, contrary to the original hypothesis, secular education was less conducive to participation than parochial education in the community. Thirdly, the young people tested were inadequately equipped in terms of attitudes and knowledge, to cope with ambiguity and they indicated a great tendency to rely on authority and simplistic answers to complex social questions.

THESIS COMMITTEE: H. Goodrich, Chairman; Paul E. Ingwell

DATE OF COMPLETION: August 1967

AN EXAMINATION OF THE JUSTICE OF THE PEACE COURT IN THE MINNESOTA TERRITORY, FROM 1838-1851

by Donald Gene Kadidlo

PROBLEM: It was the purpose of this study to examine the development of one of the important features of the judicial institution, the justice of the peace court in the Minnesota territory, from a period of early settlement beginning in 1838, through the period of territorial organization, to the enactment of statutory revisions for the Minnesota Territory in 1851 by: (1) surveying briefly the background and character of some of the men who held that office, and, (2) observing the early institution at work for the purpose of (3) discovering its role in social control.

PROCEDURE: The histories of the St. Croix Valley and adjoining area were studied, particularly with reference to early court accounts. The personal accounts of early frontier justice through diaries and reminiscences of early pioneers were invaluable because they depicted the color of, and the people's attitude toward the justice court. Also studied and of great importance were

the personal papers, legal documents, and justice court dockets of some of the men who held the office of justice of the peace.

FINDINGS: The fact that most of the justice magistrates were men of high caliber, resulted in their making competent use of the jurisdiction procedures and powers of their office. That in turn established the public's confidence in the magistrate and the justice court of which he was a part.

Social uneasiness was caused by unstable territorial and state governments. The justice of the peace's swift dispatch of justice, in spite of his own uncertainty about those laws, helped to curb that uneasiness. Seldom were the justice powers abused: where an abuse was noted there appeared to have been enough pressure from the public and other magistrates to check any future abuse.

So effectual was the justice court in the maintenance of law and order that no major crimes were committed between 1848-1849, when the area studied was without any government, thus leaving the authority of the judiciary open to question.

If the justice magistrate had occasion to go beyond his jurisdiction he did so mainly to retain the dignity of the court or to prevent possible violent settlement of a dispute by simple men in a crude society, a type of settlement which was neither long-lasting nor conducive to social order in a frontier community.

The justice of the peace court initiated the first civil administration of law into frontier Minnesota, thus laying the groundwork for future acceptance of the more complex forms of legal system and government which were to follow.

SUMMARY AND CONCLUSIONS: There was little lawlessness on the Minnesota frontier, compared to the amount in territories to the west, which were being settled at the same time. The wisdom and prudence of the few men who served as justice court magistrates on the Minnesota frontier enabled them to establish law and order on the frontier, by gaining public confidence in that legal system as an effective instrument in the obtaining and maintaining of social control until the arrival of the more complex judicial system which came with the organization of territorial government and its codification of laws.

THESIS COMMITTEE: R.G. Riggs, Chairman

DATE OF COMPLETION: October 1965

A STUDY OF THE TYPES OF LOANS IN BANK PORTFOLIOS THAT HAVE INSTITUTIONAL LIQUIDITY

by David G. Rydberg

PROBLEM: In recent years, concern has been expressed by bankers in the rise in the loan-deposit ratio. If no extra sources of liquidity can be found, this concern may be justified. The purpose of this study was (1) to describe the purposes and main functions of the three Federal agencies that may be possible sources of liquidity; (2) to investigate the make-up of the loan port-

folio of member banks in the Ninth Federal Reserve District; and (3) to determine the significance of loans that have institutional liquidity.

PROCEDURE: Current, published literature found in the Kiehle Library, St. Cloud State College, was searched for descriptive sources of Federal credit programs. Data on loans and deposits were taken from the abstract of the Federal Reserve Bank in Minneapolis, Minnesota.

FINDINGS: Three Federal agencies, the Federal Housing Administration, Veterans Administration, and the Federal National Mortgage Association, were found to be sources of insured real estate loans and secondary mortgage market. Banks in the Ninth Federal Reserve District have shown strong growth in deposits and the loan-deposit ratio has gone up 22 per cent. Time deposits showed stronger growth in relation to demand deposits. FHA and VA loans have decreased from 55.2 per cent in 1955 to 27.7 per cent in 1964. FHA and VA loans were 7.9 per cent of the total loans made in 1964.

SUMMARY AND CONCLUSIONS: The Federal National Mortgage Association is a governmental institution that will buy FHA and VA mortgages and make short-term loans on the strength of such mortgages, thus providing liquidity for banks. FHA and VA loans have played a decreasing role in the loan portfolio of banks. It must be concluded that FHA and VA loans would add little to the liquidity position of the banking system.

THESIS COMMITTEE: Carl Folkerts, Chairman; Nolin Masih

DATE OF COMPLETION: July 1966

AN EVALUATION OF THE PERSONAL PROPERTY TAX IN MINNESOTA

by Dale Louis Schneiderhan

PURPOSE: The purpose of this study was to evaluate the personal property tax as a source of revenue in the state of Minnesota. The study attempted to evaluate the personal property tax on the basis of the following criteria: equitableness; ability to pay; benefit principle; costs, convenience, and simplicity; certainty and flexibility; and regulatory effect.

PROCEDURE: The selected criteria was applied to the method in which the personal property tax in Minnesota is levied. The criteria used for evaluation was selected from a wide variety of sources on public finance, taxation, and economic theory. The data on the administration of the tax and the amount of revenue supplied by the tax was taken primarily from official government bulletins and reports issued by Commissioner of Taxation, Rolland F. Hatfield. The use of the opinions of others was restricted to official government tax study commissions.

FINDINGS: The personal property tax in Minnesota is inequitable. Most of the inequities are due to the variation of assessment procedures from one locale to the next.

The personal property tax does not tax in proportion to the taxpayer's ability to pay. Property is no longer a reliable measure of one's ability to pay.

The personal property tax cannot be based on the benefit principle. It is impossible to arrive at a correlation between property owned and the benefit received from the personal property tax.

The exact cost of collecting the personal property tax is impossible to compute because many of the officials who administer the tax have other duties which must share part of the cost of their salaries. The tax is not convenient to administer.

The personal property tax provides the certainty of an adequate amount of revenue year after year.

The regulatory effect of the personal property tax varies with the different industries and businesses in Minnesota. It has the greatest effect on businesses and agriculture, which require large inventories.

SUMMARY AND CONCLUSIONS: The personal property tax is not a justifiable source of revenue for the state of Minnesota. The personal property tax should be eliminated.

There is a need for a tax that would distribute the tax burden more fairly and that would be able to replace the funds lost by the elimination of the personal property tax.

THESIS COMMITTEE: Carl Folkerts, Chairman; Gerald Gamber

DATE OF COMPLETION: July 1965

SPEECH

TINY ALICE BY EDWARD ALBEE: A PRODUCTION RECORD AND ANALYSIS WITH EMPHASIS ON DYNAMIC THEATRICAL SYMBOLISM

by Donald Boros

PROBLEM: Man is distinguished from the beasts by his deliberate use of faculties of the mind. He has the ability to think, reason, and imagine at will. He is being of supreme intelligence and creativity. Yet, because of his very powers of mentality, he is forced to face the pains of mentality. He must make decisions. He experiences frustration, anxiety, and mental torment. Physical man may completely give way to mental man, creating a world based upon imagination. In this circumstance, the life of illusion, man finds it impossible to adjust to the real world. He can only attempt to make reality a part of his illusion or make his illusions a part of his reality. It is this thesis which is developed in Edward Albee's drama *TINY ALICE*.

The existentialists propound man's futility in the life struggle, his condemnation to freedom. Life produces anguish because of its very nature, and man is wrought in helplessness because of his very freedom. Simple exposure to the real world is to be self-contradictory. The ideal of the mind is not the real of the world. Yet, man, in striving for that ideal, will tend to convert

his reality into his ideal so that his pain will be lessened. He looks for a tranquilizer and finds only a pacifier. He needs solutions to his problems, finds none, so convinces himself either that it is not important to have a solution, or that his lack of solution is the solution itself. In a word, man, in order to fulfill his need for security, tranquility, and peace of mind, convinces himself of the existence of the sublime by making what is real appear to be an illusion and what is illusionary appear to be real. He does this to supply himself with an inner peace, eliminating contradictions and paradoxes, so that his consciousness will be less painful. He attempts to merge the conscious with the unconscious, the real with the imaginary, and lives, not in reality, but in a stupor of illusionary self-gratification.

In his struggle to conquer his self, man can only flee from it. He fears his self; hence, he recognizes the need for conquest of that self. In attempting the conquest, his fears are regenerated; hence, he flees from them. For him, life is a circular retreat, a teasing interplay, producing nothing except the pains of frustration.

In knowing that a material reason for the cause of his existence will be painful, man will either alter the reasons, or convince himself that pain is good. If the reasons or forces are too powerful to be changed, man will make himself a martyr to his own cause. He will ask for pain since he can not overcome it. He has neither a defense or an offense so there can be only humiliation. There is a self-imposed need for surrender to his condition rather than courage to face the pain caused by struggle against the odds he finds opposing him. No matter which way he turns, he finds pain-pain in the awareness of his total existence, and pain in the struggle against recognizing that he simply has the awareness. So, feeling himself totally subject to his consciousness, he literally accepts himself as being insignificant. To survive, he must succumb to his condition and call it good.

FINDINGS: The conflicts in TINY ALICE are universally a part of man's very nature. He lives in a world of incessant mental torment. Since he is inherently too weak to fight reality, he attempts to make the reality a part of his life of comfort and security, the life of illusion. Such is the essence of the meaning of TINY ALICE.

The presentation of TINY ALICE which is the basis of this project, was directed to exhibit the merging of the real with the illusionary. It was a project which included such technical problems as finding solutions to the difficulties involved in the personification of abstractions and translating the subjective into the objective in language and action. It also demanded the implementation of directing techniques which required the manipulation of people and ideas toward the goal of achieving objective believability as characters and motivations on the physical stage.

The three performances of TINY ALICE which evidenced the results of the creative work on this project, were held in the Gray Campus Laboratory School Auditorium on the campus of St. Cloud State College, St. Cloud, Minnesota, on Thursday, Friday, and Saturday, April 13, 14, and 15, 1967. The facilities included a proscenium stage, extended five feet into the auditorium house. The seating capacity of the auditorium was 270 persons.

The project was undertaken solely by students, although it was advised by theatre staff members. It proceeded from a five hundred dollar working

budget. From this allotment were built three stage settings plus the majority of costumes. It also included funds for royalties, promotions, the rental of miscellaneous set items, and the rebuilding of major property units.

This production of TINY ALICE was experimental in every respect. Because of the ambiguity, subjectivity, and heavy symbolism of the play, no single definite approach was dictated. Innovation and trial of new methods of staging and general production techniques was possible. Every aspect of production was prepared in this free spirit.

TINY ALICE is a difficult drama to produce. It is filled with vaguery and ambiguity; yet, it contains an element of thought which continues long after the final performance. It is immodestly believed that TINY ALICE required creative freedom, controlled and concentrated toward a goal of believability and quality of production. Such a goal demanded the application of the many severe disciplines of this complex art form.

THESIS COMMITTEE: Arthur L. Housman, Chairman; E. Scott Bryce

DATE OF COMPLETION: August 1967

THE RHETORIC OF PEACE: FRANK B. KELLOGG AND THE PACT OF PARIS

by Mary Constance Wood Crane

PROBLEM: It is the purpose of this study to determine the rhetorical effectiveness of Frank Billings Kellogg during the period in which he sought acceptance of the Pact of Paris, a multilateral treaty renouncing war as an instrument of national policy and declaring that international disputes shall be settled by pacific means.

PROCEDURE: An examination is made of two of Kellogg's speeches, "The War Prevention Policy of the United States," and "The Settlement of International Disputes by Pacific Means," which chronologically represent his initial and final persuasion in support of the Peace Pact. The evaluation of Frank Kellogg's rhetoric is based upon the following criteria: the speaker, the audience, the speeches, and the occasion. The study presents a reconstruction of the social setting which occasioned the speeches, a biographical sketch of Frank B. Kellogg, and an analysis of the speeches. The speeches are evaluated in terms of the Aristotelian modes of persuasion: *ethos*, the character of the speaker; *pathos*, the speaker's appeals to the emotions of the audience; and *logos*, the speaker's use of logic in presenting his arguments.

FINDINGS: Frank Kellogg uses ethical appeals in associating himself with the Pact of Paris. His use of the first person projects to the audience his personal involvement with the Peace Pact. He relies on his reputation as a legal expert and as Secretary of State both as an ethical appeal and as support for his assertions. He employs emotional appeals to the fear of war and to the desire for peace. His logical arguments are presented in the form of

enthymemes, most commonly as hypothetical syllogisms. His arguments are often complex, but the language is adapted to his audience.

SUMMARY AND CONCLUSIONS: The conclusion suggested by this study indicated that Frank Kellogg's rhetoric was effective in securing the acceptance of the Pact of Paris.

THESIS COMMITTEE: Ellsworth Scott Bryce, Chairman; Arthur L. Housman

DATE OF COMPLETION: August 1967

A COMPARATIVE STUDY OF THE ACADEMIC PREPARATION AND PRODUCTION PROCEDURE OF SELECTED HIGH SCHOOL DRAMA DIRECTORS

by Marcia Lee Bollinger Dalen

PROBLEM: The writer proposes to examine several of the factors in the background and production habits of demonstrably superior high school directors in the state of Minnesota. A central interest of the writer is that of revealing common elements of background, experience, and practice, if any, which may emerge from the study.

PROCEDURE: Selection of directors for the study was based upon two criteria: (1) those directors who had received two or more "Superior" ratings at the Minnesota State One-Act Play Contest and/or (2) those directors considered to be outstanding by more than three of the established and practicing critic judges who were polled. Such judges are members of speech and theatre departments in Minnesota colleges and universities who have annually judged Minnesota high school play contests over a period of years.

Data for this study were obtained through individual interviews with each of the eight directors selected. The length of the interview varied from two and one-half to four hours. A prepared outline was used by the writer but served as a guide rather than as a restricting questionnaire. This interviewing technique allowed directors to freely and spontaneously reveal and discuss elements in their directing procedure and background that they considered to be central to their individual working methods.

FINDINGS: In almost all areas, both similarities and dissimilarities were found to exist in directors' attitudes and procedures. Some of the most revealing findings include the following: (1) All eight directors either have received or are in the process of receiving graduate degrees in the academic field of theatre. (2) A majority of the directors are active in community and summer stock theatre work. (3) A majority of the directors have had undergraduate or graduate courses in theatrical directing, dramatic literature, acting, and stagecraft. (4) Directors agreed that only those plays which unquestioningly qualify as good dramatic literature will provide a challenge worthy of a good director and good student actors. (5) Directors agreed that some form of script preparation should take place prior to the time of auditions

and rehearsals. No single method of preparation was found to be common to a majority of the directors. (6) Directors disagreed markedly with regard to specific methods of conducting auditions and rehearsals.

SUMMARY AND CONCLUSIONS: As a result of this study, it has become overwhelmingly clear that these eight directors find great joy and challenge in their work and invest enormous energy in their efforts. Theatre, to them, appears to be a source of great personal satisfaction. It is impossible for the writer to determine whether this is a cause of or results from their professional superiority. The fact that it is clearly present in their attitudes seems to be a factor of some interest and importance.

THESIS COMMITTEE: Arthur L. Housman, Chairman; Paul E. Cairns

DATE OF COMPLETION: December 1966

WAVE THE FLAG: ONE-HUNDRED YEARS OF POLITICAL DISSATISFACTION IN THE AMERICAN THEATRE.

by Charles Ferrall

PROBLEM: The purpose of this paper is to construct a dramatic form which will trace the development of American theatre as an instrument of political protest and to characterize and humanize the forces behind its plodding progress toward maturity and significance.

The paper seeks to demonstrate by dramatization the degree of our theatre's potency in reflecting and reforming our national ills, and by the same means, to raise the following questions: To what extent has history shaped our theatre, and vice-versa? Can a given play influence popular opinion, change minds? Why has our theatre been so sluggish in acquiring thrust and substance? In what ways has the newspaper, the American vaudeville tradition, and the mass mentality retarded or accelerated its growth? To what extent can a play instruct as well as entertain? These questions cannot fail to be of interest to any serious student of the theatre, but their appeal may be broadened if they are presented in graphic, dramatic form.

PROCEDURE: This is a creative thesis; it was written to enable the reader (or more hopefully, the spectator) to visualize the foregoing questions by giving them concrete form. Possibly the most workable format for such humanized history is a play-out, or intellectual vaudeville, which necessitates much breadth and little depth. Yet dramatized suggestions may impinge more deeply on the spectator's consciousness than exhaustive textbook discussion. The manner of presentation of this treatment (as opposed to "study") then, is in the form of a dramatic narrative or cavalcade, a kaleidoscope cross-section of representative forms of American political theatre from the early 1860's to the present.

Design: A running argument between George M. Cohan (traditional artifice) and Walt Whitman (progressive dissent) over the political value of the American theatre as revealed through a series of excerpts from works with political

themes (for instance, the Negro's struggle as seen in minstrelry, melodrama, polemic, and guerrilla theatre), interspersed with vignettes which provide a historical context for these works, and which demonstrate the influence of social, economic, cultural, and psychological factors upon the theatre.

FINDINGS: There is scarcely a significant area of life in the United States that did not find a place in the political drama, although its appearance may have been infrequent and its treatment superficial. These plays are always written for the contemporary scene, and even when a historical subject is used, it has current application. The fact that playwrights built their dramas for audiences aware of contemporary issues may account for the comparatively few plays whose dramatic values enable them to rise above ephemeral subjects. Probably the most enduring theme in the political drama centers around Washington, D.C.

Although the number of plays dealing with social injustices or ideological menaces has grown in quantity, maturity, technique, and power in the past one-hundred years, few continue to hold audiences once their threats have passed away. Few plays of any stature have dealt with race relations and organizations for peace. The radical polemic, which has been sporadic at best within the commercial mainstream, has been forced within recent years into an outside guerrilla state.

Nevertheless, despite economic and social obstacles, twentieth century dramatists did bring greater understanding, keener awareness of issues, and a willingness to discuss grave issues to their works. In musical comedy, the change is even more pronounced; the satire is deeper, more penetrating. While early political plays were often vaudeville hokum, later serious plays incorporated elements of vaudeville, and even the more sophisticated writers used vaudeville techniques with telling effect.

The advance in political drama may be divided into three periods: before 1900, when the dramatists used political events as window dressing for their plots; from 1900 to 1930, when the playwright attacked specific abuses; and from 1930 to the present, when the author not only attacked abuses but also advocated a philosophy of government for politicians and voters to follow. The widespread communications media, particularly the newspaper, while helping to produce this result, produced at the same time a limiting taste for sensationalism.

The revolutionaries of today differ from their spiritual fathers in taking protest off the proscenium and into the streets. Yet each new surge of political theatre has foundered as the fever chart of society goes down. The protest of the thirties lost its momentum to World War Two.

CONCLUSION: There is merit in both points of view presented in this paper. A more forceful theatre is indicated, but it should not ignore the techniques of artifice. There would seem to be a perpetual conflict between the theatrical jibe and the serious thesis play, but we may have to accept the fact that our theatre is an amalgam of prose, poetry, song, and artifice, and that, indirectly, it has reflected more of the American character than we might care to admit. Much of our later significant drama bears a closer kinship to the early ridiculed product of the democratic and cosmopolitan minstrelry and melodrama, childish

and inchoate as it was, than to the anemic plays which depicted the complications of a fashionable and unrepresentative society. While it is true that nineteenth and early twentieth century political playwrights saw life in little more than amused hyperbole and melodrama, many were not without common sense, boldness in design, or pungent dialogue.

Perhaps we should not despair if Broadway fails to produce an anti-toxin for the deadening clichés of contemporary political theatre. Perhaps theatre of this kind should break out of the proscenium and plant itself squarely in the midst of the daily life of the people. The theatre may become more of an art when it becomes less consciously aesthetic. Yet in making the theatre a vital political force, new groups should not deny the tradition of the American theatrical past. As propagandists, they should see where Broadway is demonically effective. Its songs and dances are about essentially middle class myths; its opulent extravagance of emotion and set, its stars reaffirm the lavish ethic of Success, just as vaudeville did.

Revolution needs more than images of action, but the American ideologies have not found a form to haunt their society. There is the stomach for revolution but not the talent. Over the long haul, the political theatre has apparently produced no immediate changes in popular thinking. Perhaps, instead of composing plays of hot topical headlines, of data, playwrights should seek a subtler, more metaphorical approach, using images and analogies which say what it is like, as opposed to what it is. Newspapers daily tell us what is, yet the status quo remains unchanged. The radical voices taking the stage are necessary, but are already hoarse from screaming in a high wind. And the violence goes on.

The questions posed by this play-out are not easy to answer; it is basically an attempt to make the spectator aware of them. Any answer must be largely hypothetical and conjectural, and so the work hopes to convey more of the spirit than of the actual letter of American and its theatre.

THESIS COMMITTEE: R. Keith Michael, Chairman

DATE OF COMPLETION: July 1968

AN INVESTIGATION OF THE EFFECT OF AN IN-SERVICE TRAINING PROGRAM AND SELECTED VARIABLES ON THE ACCURACY OF TEACHER REFERRAL OF SPEECH DEFECTIVE CHILDREN

by Gary A. Germann

PROBLEM: This study was undertaken to evaluate the effectiveness of an audio-visual in-service training program when used as an instrument to familiarize teachers with characteristics of speech defective children so that they may do a better job of referring. A second purpose was to analyze the effects of selected variables on the accuracy of teachers to refer speech defective children. The training program was developed by the Department of Special Education, Robbinsdale, Minnesota.

PROCEDURE: Experimental: Area school districts having no experience with speech therapy services provided the subjects for this investigation. The

subjects were comprised of sixty-six elementary school teachers servicing 2056 children. The teachers were divided into two groups: the experimental teachers and the control teachers.

The teachers in the experimental schools received a thirty-one minute audio-visual in-service training program. The purpose of this program was to introduce to the teachers the organization of a speech therapy program and to familiarize them with the different classifications of speech defects. The teachers in the control schools received no training.

Each teacher was then asked to refer children with speech defects. To establish a basis for statistical comparison, each child's speech was checked by a senior clinician in speech and hearing therapy at St. Cloud State College.

Statistical: The data were punched on IBM cards and processed on the IBM 1130 computer. A computer compatible application of the discriminant function to multiple linear regression was used as the statistical model. Briefly, the discriminant function tests the degree to which the optimally weighted variables, when combined, predict to which of two classes a subject belongs.

For the purposes of this investigation the child was in a school in which the teacher has received an in-service training program or in a school in which the teacher has not received the in-service training program.

If the variables chosen for this investigation are related to the criterion variable, the multiple regression coefficient will be significant. Computer procedures allow the measurement of the contribution each variable makes to the multiple regression equation. In this way variables which account for the major portion of the variance can be identified and those variables having little or no significant impact on the variance can be eliminated.

FINDINGS: In this study three interrelated questions were asked and their answers sought through the testing of fifteen hypotheses which were derived from these questions.

The contribution of individual variables to the full model was analyzed to determine if any could be eliminated thus simplifying the predictor model or full model. It was found that the variables of in-service training, years of teaching experience, teachers' classification and clinicians' classification do contribute to overall predictor efficiency and therefore they could not be omitted from the full model. The remaining variables; type of school, amount of teacher's education, sex of teacher, years since teacher had a speech course, grade taught or in, sex of student and whether or not the teacher had taken a speech course did not contribute significantly to the overall predictor efficiency of the full model.

SUMMARY AND CONCLUSIONS: This study pioneered in the exploration of the effectiveness of an in-service training program to increase the accuracy of teacher referrals. The results were favorable indicating referral accuracy is increased to a significant degree by a program of in-service training. This has been a long held assumption but is certainly worthy of further investigation. It is quite conceivable that a different training instrument would contribute to a lesser or a higher degree.

THESIS COMMITTEE: Joan Jacobson, Chaiman; Robert D. Duffy

DATE OF COMPLETION: December 1968

AN ANALYSIS OF THE MINNESOTA STATE ONE ACT PLAY CONTESTS FROM 1949 THROUGH 1968

by Richard R. Hill

PROBLEM: The purpose of this study was to gather all data involving participation in the State One Act Play Contest from 1949 through 1968 and to present this material in such a way as to make evident as many different aspects of play production at the contest level in Minnesota as possible. Information concerning competition among districts and regions, types of plays and success of directors and communities, number and types of schools successfully competing and recurrent participation is evident through different breakdowns of the material gathered.

PROCEDURE: No complete records had been consistently maintained by any individual or organization since the inception of the State One Act Play Contests. Material for the study was gathered from publications of the Minnesota State High School League and by contacting various participating directors in state as well as schools, district secretaries and administrative members involved in contest planning and supervision. The entire collection of data is presented in the appendices of the thesis and the body of the thesis points out the most relevant facts concerning the data.

FINDINGS: (1) In general, representation in the contest at the state level, in terms of the percentage of schools in the state represented, is not very high, nor does it seem that it will be very high in the foreseeable future. (2) The director seems to be one of the keys of successful participation in the contest. (3) Regions and districts throughout the state vary a great deal in terms of quality of theatre productions and competition as related to the One Act Play Contest situation. (4) Evidence would seem to indicate that school size is not a predominant factor in determining successful competition in this contest. (5) The majority of schools in the state are participating in the contest at the sub-district and district levels. (6) A small amount of schools and directors seem to be responsible for the majority of productions at the state level. (7) The vast majority of schools that have participated in the contest consistently each year have never been successful in reaching the state level of competition.

Recommendations concerning the contest are included in the thesis.

The study indicated a need for further study in the high school drama area concerning: facilities, directors and communities as factors in successful drama programs.

THESIS COMMITTEE: Mary Emily Hannah, Chairman; Ellsworth Scott Bryce

DATE OF COMPLETION: June 1966

AN EXPERIMENTAL STUDY TO DETERMINE THE EFFECT OF A WRITTEN SPEECH OF INTRODUCTION UPON THE PERSUASIVE SPEECH THAT FOLLOWED

by Bill O. Kjeldahl

PROBLEM: It was the purpose of this study to measure experimentally the the ethos-building impact of a speech of introduction on the persuasive effectiveness of the speech that followed. It compared the impact of an effective introduction to an ineffective introduction replicating an earlier study by Barbara Kersten but with the following new approaches: (1) Use of a live speech instead of a tape-recorded speech. (2) Use of a delayed opinion shift test as well as the shift of opinion test immediately following the speech. (3) Use of a domestic speech topic instead of an international speech topic. (4) Use of a written introduction to be read rather than a tape-recorded introduction.

PROCEDURE: The following steps outline the procedure used in this study: (1) Kersten's criteria for a speech of introduction were used to write two speeches of introduction: one that corresponded with the established criteria for an effective introduction and one that did not correspond to those criteria. (2) Students in seventeen sections of Fundamentals of Speech filled out an information sheet one week before the experiment and marked on a five-point linear scale their opinion on eight questions, one of which measured opinion on the subject used in the persuasive speech. (Sky diving is a safe sport) (3) The subjects used in this study were randomly divided into three groups to hear a live persuasive speech simultaneously in an auditorium. (a) Group I received a dittoed copy of instructions and a second sheet with the written effective speech of introduction containing 256 words. (b) Group II, the control group, received the dittoed instructions with a second sheet of written material containing 277 words of material taken from a speech textbook. (c) Group III received the dittoed instructions and a second sheet with the written ineffective speech of introduction containing 238 words. (4) Following the speech each student again marked a five-point linear scale to indicate his opinion on the eight questions, one of which measured opinion on the topic of the persuasive speech. (5) Approximately one month later during the final class meetings or during the final examination period each student again marked on a five-point linear scale his opinion on the eight questions, one of which measured opinion on the persuasive speech.

FINDINGS: (1) There was a statistically significant difference between the ratings given the effective written introduction and the ineffective written introduction used in this study. (2) There was no statistically significant difference between the shift of opinion for a persuasive speech preceded by the effective written introduction as compared to the shift of opinion for that persuasive speech when preceded by an ineffective introduction.

SUMMARY AND CONCLUSIONS: It was the writer's belief that the results obtained by Kersten did not appear in this study primarily because of (1) the variations employed in the experimental design and (2) the variations inherent in a live speech situation.

The writer believes that the most fruitful future research in this area would be studies dealing with the hypothesis concerning the "vacuum situation" derived from the present study. This hypothesis suggests that introductions are likely to have the greatest impact in speech situations where the audience is least able to form a direct judgment of the speaker's character.

THESIS COMMITTEE: Donald Sikkink, Chairman; Arthur L. Housman
DATE OF COMPLETION: August 1965

A STUDY ON THE RELATIONSHIP OF VISUAL-MOTOR DYSFUNCTION AND ARTICULATION PROFICIENCY TO PROGRESS IN SPEECH THERAPY

by James J. Kornovich

PROBLEM: The purpose of this study was to investigate the relationship of visual-motor dysfunction and articulation proficiency to progress in speech therapy.

PROCEDURE: To attain the necessary data, the study consisted of three parts. Part I consisted of diagnosing the functional articulatory disorders and of testing the visual-motor ability of elementary school age children. The Templin-Darley Picture Articulation Test and the Marianne Frostig Developmental Test of Visual Perception were administered to the experimental subjects. The experimental subjects were referred to the experimenter by the speech pathologists of the Anoka-Hennepin School District. Upon completion of the testing, two groups were established which included, (1) subjects with both functional articulation and visual-motor involvement and (2) subjects with only a functional articulation problem. Upon meeting selected criteria, twenty-five subjects were randomly assigned to each group.

Part II of the study was a three month direct therapy program for each of the subjects selected for the two groups. The direct therapy approach included a statement of objectives and an outline of therapeutic approaches.

Part III of the study was devised to retest the articulatory ability of the subjects in the two groups. Using separate test forms, the individuals of each group were retested for articulation change. The obtained data were subjected to an analysis of variance to test the difference between the means.

FINDINGS: The subjects exhibiting only a functional articulation disorder needed a mean gain of 36.6 for the total correction of the articulatory disorder. The attained mean gain in articulation skill was 24.32 or a 66.45 per cent improvement in articulation skill.

The subjects showing a functional articulation disorder and a visual-motor dysfunction needed a mean gain of 49.64 for the total correction of the articulatory disorder. The achieved mean gain was 5.24 or a 10.56 per cent improvement in articulation skill.

The obtained F ratio of 55.54, in analysis of variance, was significant beyond the five per cent level of confidence and resulted in the rejection of the null hypothesis.

SUMMARY AND CONCLUSIONS: Within the limitations of this study it can be stated that children with both functional defects of articulation and visual-motor dysfunction will in fact make less progress in speech therapy than children with only an articulatory defect.

The present study was considered exploratory in nature and suggests further research.

THESIS COMMITTEE: Joan Jacobson, Chairman; Stanley C. Knox, Paul E. Ingwell

DATE OF COMPLETION: May 1968

A RHETORICAL ANALYSIS OF SELECTED SPEECHES DELIVERED BY SENATOR KARL E. MUNDT IN SUPPORT OF THE FREEDOM ACADEMY PROPOSAL

by David Ray McFarland

PROBLEM: The purpose of this study was to critically evaluate three speeches delivered by Senator Karl E. Mundt in support of establishing a Freedom Academy to train anti-Communist combatants. This evaluation of these speeches was made on the basis of standard Aristotelian principles.

PROCEDURE: The critical evaluation was accomplished in several phases. First, the background of both the speaker and the subject area were studied. Second, three speeches were selected to serve as "model speeches." Their purpose was to serve as a foundation for the analysis of the Freedom Academy addresses. The "model speeches" were studied in regard to the three modes of proof--ethical, emotional, and logical--in order to determine Senator Mundt's practice of these techniques when not speaking solely on the proposed Freedom Academy legislation. Third, three of Senator Mundt's speeches in which he advocated the establishment of a Freedom Academy were selected. The information obtained from the preliminary analysis of the "model speeches" was used as a basis for determining the peculiarities, if any, which existed in the two groups of speeches. The Freedom Academy speeches were evaluated on the basis of four canons of rhetoric--invention, disposition, style, and delivery--and the adaptation of them to the speech occasion.

FINDINGS: The Freedom Academy speeches were observed to closely resemble the "model speeches." Several characteristics of Senator Mundt's persuasive techniques were utilized in all six speeches.

First, Mundt endeavored to organize his ideas and words in accordance with his analysis of the audience. Whether he was addressing a convention in his own state as he did in the "model speeches" or was speaking to a university convocation about the Freedom Academy, Mundt's audience adaptation was apparent. For less erudite audiences, Mundt employed a greater use of emotional proof than he used when speaking before scholarly listeners. Mundt indicated his respect of learned audiences and attempted to adjust his speaking accordingly.

Second, the study of Senator Mundt's modes of proof revealed a great reliance upon ethical proof to establish a basis for the acceptance of the subsequent emotional and logical proofs. This ethical appeal was achieved through the standard techniques of establishing the character, sagacity, and good will of the speaker.

Third, Mundt's use of emotional proof contained numerous instances of propagandistic techniques which oversimplified the arguments under discussion and leaned them in the speaker's favor. Deductive reasoning was employed when arguments were simplified through overgeneralization. Inductive reasoning was used most frequently in the organization of Mundt's arguments.

Fourth, the style of the speaker, adapted to each audience, aided the ethical development of his character. His use of language was altered to meet the requirements of the audiences. Before an erudite audience, he displayed language which was designed to make him appear more learned. His use of language before popular audiences was commonplace. The speaker's delivery, dynamic and forceful, enhanced the personal image of Mundt in his attempt to appear well informed, virtuous, and with good intentions. His zeal to communicate was reflected by his enthusiastic and effective delivery.

SUMMARY AND CONCLUSIONS: The Freedom Academy rhetoric of Karl Mundt was observed to possess three principal areas of emphasis: (1) the Senator's great ability for audience adaptation; (2) his strong reliance upon ethical and emotional proof; and (3) a colorful style and delivery. Senator Karl Mundt's speeches in favor of the Freedom Academy legislation revealed many of the abilities of a knowledgeable persuader who was able to convince many of his listeners, but failed to achieve the necessary actuation of them which would have aided his Freedom Academy proposal.

THESIS COMMITTEE: Ellsworth Scott Bryce, Chairman; R. Keith Michael
DATE OF COMPLETION: August 1966

A STUDY OF STRESS CAUSED BY DELAYED AUDITORY FEEDBACK ON THE ORAL READING RATES OF MALES AND FEMALES

by Lyle L. McFarling

PROBLEM: The purpose of this study was to test the abilities of males and females to resist a specific stress producing situation. Delayed auditory feedback served as the stress producing agent, and oral reading rate was used as the criterion behavior.

PROCEDURE: Thirty first-grade males and thirty first-grade females were selected from the St. Cloud Public School System. All subjects were screened and shown to have the following characteristics: normal speech, normal hearing, and an I.Q. between 85-115. The two groups of subjects were exposed to the following conditions: Condition 1. Each subject read two standardized paragraphs under normal conditions. Condition 2. Each subject read the same material while wearing earphones with normal auditory feedback. Condition 3. Each subject read the material while wearing earphones with delayed auditory

feedback. Condition 4. Each subject read the material under normal conditions without the earphones. The measures under study were the differences in total reading time between the four conditions. To test the significance of the difference in performance between the four conditions a "t" test was applied.

FINDINGS: The results yielded by this procedure indicated that the reading rate differences between the males and females on all conditions were significant at the .05 level. The females seemed to have less difficulty reading under the influence of delayed feedback than did the males. The mean reading rate increase during the delayed feedback condition was 26 seconds for the males and 19 seconds for the females.

SUMMARY AND CONCLUSIONS: The results of this experiment indicate that females are significantly less affected by the stress of delayed auditory feedback than are males. Although a great deal of individual variation was noticed, the first-grade males were less able to continue their natural reading rate when subjected to the stress of delayed feedback than were the females. This suggests that females are superior to males in coping with this specific stress situation.

THESIS COMMITTEE: Robert D. Duffy, Chairman; Joan Jacobson

DATE OF COMPLETION: August 1968

**A PROJECT IN SCENIC DESIGN FOR PRODUCTIONS OF
YERMA, LONG DAY'S JOURNEY INTO NIGHT, AND
THE PRIVATE EAR: THE PUBLIC EYE**

by Raymond F. Mikesb, Jr.

PROBLEM: The writer prepared four scenic designs for three related reasons: first, four plays allowed the artist a creative variety of design styles. Secondly, the four plays presented a wider variety of specific technical problems which the designer was required to solve. Thirdly, four plays gave the designer the opportunity of working with three different directors with varying creative approaches.

PROCEDURE: The thesis is divided into three chapters, the first of which is devoted to the original analyses of the plays made by the designer for the purpose of initiating the creative process. In the second chapter, the writer examines the directors' production concepts which gave more specific artistic direction for the designing process. The third chapter contains the writer's conclusions which emerged from the total design experience. Two Appendixes are included which contain the visual element of the design process.

FINDINGS: Yerma--The designer brought an initial artistic direction for the scenic design to the conference, and left the conference with the same artistic direction. The production conference did not materially supplement that initial concept.

Long Day's Journey Into Night--The director did not at any point define a unified production concept precisely. Instead, the director provided the designer with a list of set requirements. The designer felt that this was a valid and productive approach in this instance as the style being used was realistic. An excellent working relationship existed between both artists. Ideas were communicated easily and effectively at all meetings which succeeded the initial production conference.

The Private Ear and The Public Eye--The director's production concept gave the designer an artistic direction without placing restrictions on the designer's creative intent. The production conference was extremely helpful.

SUMMARY AND CONCLUSIONS: This project in scenic design provided invaluable practical experience for the designer. Both the variety of creative approaches and the repetition of conventional technical procedures, such as the establishment of work schedules, the conduct of production conferences, etc., contributed to the worth of the experience.

Perhaps most important to the designer was his realization of the vital importance of the communicative relationship between the designer and the director. Both artists pursue the goal of a unified, appropriate production setting. Their capacity to communicate easily and with clarity, in both human and artistic terms, will finally determine the speed, efficiency, and artistic satisfaction with which the goal is achieved.

THESIS COMMITTEE: Arthur L. Housman, Chairman; R. Keith Michael

DATE OF COMPLETION: August 1968

**ONE WAY PENDULUM BY N.F. SIMPSON:
A PRODUCTION RECORD AND ANALYSIS
WITH EMPHASIS ON DIRECTORIAL
TECHNIQUE AND PHILOSOPHY**

by Paul G. Nickolatos

PROBLEM: To direct a production of the play, *One Way Pendulum*, record the process, and analyze the directorial techniques and philosophies employed.

PROCEDURE: Theatre is a synthesis of all the arts. The direction of a theatrical production demands an amalgamation of these arts. The director must guide the actor, designers, and technicians toward a unified production concept. The production of *One Way Pendulum* was used as a basis for a study of my directorial techniques.

FINDINGS: The complex art of theatre production demands many disciplines. Each production is a separate problem, and must be treated accordingly.

SUMMARY AND CONCLUSIONS: This thesis is the culmination of the actual direction of *One Way Pendulum*. It is an account of the techniques employed

by one director in a specific production. It is representative of the directorial techniques and philosophy which govern the practices of this director.

THESIS COMMITTEE: R. Keith Michael, Chairman; Arthur L. Housman

DATE OF COMPLETION: August 1968

ANDROCLES AND THE LION: AN ADAPTATION OF A STAGE PLAY TO TELEVISION

by James C. Pebler

PROBLEM: This thesis is an adaptation of the play *Androcles and The Lion* by George Bernard Shaw for presentation on television. The adaptation includes a complete production book, set designs, and costumes.

PROCEDURE: The content and setting of the play dictates its performance whether it be via television or on stage. The play is at the same time a delightful comedy and a didactic presentation of the social philosophy of George Bernard Shaw. "Although written in 1912, the play presents a progression of ideas and arguments that are important and relevant to our contemporary society. The conflict within which Shaw presents his philosophy is between the "Have-and-Holders" and the Protestors. The characters of the play profess Shaw's philosophy.

FINDINGS: Television is thought of as a mass medium by which a large viewing audience is able to observe a play which can be seen by relatively few people in a normal theatre situation. Television, has a mass audience but the viewers are played to on a personal basis. The total audience may be many millions; the real audience are those before one television set. This small audience, close to a television set, is an important consideration for a television director. In this medium the audience does not interact emphatically as in the theater. According to Steinberg the television "audience does not act directly upon or react directly to the external environment. But the events are experienced vicariously by the process of mental abstraction." Television "acts in an intermedium area. And as a psychological buffer state by willing suspension of disbelief." The abstract lion, set, and plot situations are symbols supporting the "process of mental abstraction" and direct it to the ideas and views of Shaw as well as to the imaginary world of the play. Thus the ideas professed in the play are enhanced by its adaptation to television.

SUMMARY AND CONCLUSIONS: Because of its social value and its adaptability to television, which aids in presenting the didactic message, this play has been selected.

THESIS COMMITTEE: Arthur L. Housman, Chairman; Ellsworth Scott Bryce

DATE OF COMPLETION: August 1967

A COMPARATIVE STUDY OF HAROLD CLURMAN'S DRAMATIC CRITICISM WITH THAT OF OTHER NEW YORK CRITICS

by Peter Allen Peterson

PROBLEM: The purpose of this study is to evaluate Harold Clurman's dramatic criticism of New York plays by comparing it with those of selected magazine and newspaper critics.

An analysis of Harold Clurman's dramatic criticism is important. If good dramatic criticism is to continue it is necessary to understand what superior dramatic criticism is and why it is superior.

PROCEDURE: In this study twenty-five reviews by Harold Clurman were compared with twenty-five reviews by four other New York magazine or newspaper critics. The reviews covered a five-year period from 1953-1957. To broaden the scope of comparison, five plays have been selected from five different categories. The categories were set up according to the type of play or the length of the run on Broadway. These categories include serious plays, comedies, and musicals that had successful runs, revivals, and plays that had a short run.

The following aspects of the reviews were compared: 1) organizational pattern; 2) evaluations of literary quality, evaluations of playwright's talent, evaluations of acting, evaluations of scenic effects, and evaluations of direction; 3) use of Goethe's theory of art criticism; 4) use of a literary, theatrical, or practical point of view; 5) critics' evaluations of literary quality compared with the actual runs of the plays.

FINDINGS: In comparing the organizational pattern of Harold Clurman's dramatic criticism with that of the other dramatic critics, the writer could find little significant difference. In any case, the writer feels there was nothing apparent in Clurman's organizational pattern that would tend to make the presentation of his criticism superior.

It can also be concluded that there is nothing apparent in Clurman's evaluations of the literary quality of the play, the playwright's talent, the acting, the scenic effects, and the direction that differed significantly from that of the other critics. His predictions of success were also consistent with the other critics' when compared with the run of each play.

SUMMARY AND CONCLUSIONS: This comparative study was undertaken on the thesis that there might be some tangible evidence in the drama reviews of Harold Clurman that would single out his criticism as being superior to the criticism of other critics. The study revealed that there is not.

The comparison of Harold Clurman's dramatic criticism with that of the four other prominent drama critics leads the writer to draw one major conclusion: the praise and awards given to Mr. Clurman (thereby labeling his work superior) can not have been given so much in recognition of the accuracy of his evaluations, as his accuracy is not dissimilar from that of his fellow critics; but

rather this recognition must be related to the manner or literary style in which he states his opinions.

Therefore, the study has shown that the superior status of Clurman as a dramatic critic is probably the result of his theatrical background, his personality as reflected by this background, and his ability to express himself.

THESIS COMMITTEE: R. Keith Michael, Chairman; Ellsworth Scott Bryce

DATE OF COMPLETION: August 1966

A COMPARATIVE STUDY OF STYLISTIC DEVICES IN TWO REPRESENTATIVE SPEECHES BY DR. WALTER H. JUDD

by Clara B. Riveland

PROBLEM: It was the purpose of this study to examine two speeches that were made by Dr. Walter H. Judd in order to (1) show the relationship between his speaking style and his speech objective; (2) investigate a possible relationship between his speaking style and effectiveness; and (3) consider the relationship between his speaking style and his ethos.

PROCEDURE: An attempt was made to procure as many of Judd's speeches as possible which had been taped or had appeared in print. From these speeches, two were selected which were "A Philosophy of Life That Works" given at the Quadrennial Convention at Buffalo on January 2, 1932 and "The Real Test is Our Moral Strength" delivered to the Executives' Club of Chicago on March 26, 1954. Several libraries were contacted for biographical material and for information related to these speeches. The Buffalo and Chicago newspapers that had been published during the time of the respective speeches were examined. Individuals familiar with the subject were contacted for information.

FINDINGS: In analyzing Judd's speaking style it was discovered that his sentences, which included both loose and periodic sentences, were grammatically correct and varied in length. In the first speech, some of these sentences were rhetorical questions whereas in the second speech he limited his rhetorical questions but used the question and answer technique freely. In both speeches he used specific words but he increased his use of general words in the second speech. In both speeches he employed conversation, euphuism, parallelism and repetition. Also, in both speeches he argued by enthymeme, by example and by analogy and in the second speech he added statistics and propaganda techniques. He used cliches extensively in both speeches. Pathos were an important element in the first speech but were obvious in only one instance in his second speech. Thus it was discovered through analysis that both speeches had a varied style.

SUMMARY AND CONCLUSIONS: Dr. Walter H. Judd exerted some influence on his Buffalo audience as several people asserted that they entered the mission field after hearing his speech. It is evident that his Chicago audience enjoyed his speech but it only reinforced opinions already formed rather than producing new action. There is little evidence to indicate that Judd has undergone any professional growth as a speaker although his charismatic appeal moved both audiences and continues to move contemporary audiences. Apparently Walter H. Judd is not exerting a great deal of influence on the American people at the present time except within the circle of his Republican friends. People continue to listen to him politely and enjoy his speeches for their interesting style while they disregard the message contained in the speeches. However, the final judgment of his effectiveness cannot be determined for generations to come.

THESIS COMMITTEE: Ellsworth Scott Bryce, Chairman; R. Keith Michael
DATE OF COMPLETION: August 1968

**"LI'L ABNER AS PRODUCED BY FRANK B. KELLOGG HIGH SCHOOL
ST. PAUL, MINNESOTA, NOVEMBER, 1965**

by Warren Walter Schuneman

PROBLEM: It was the writer's purpose to present a production record of the musical comedy, "Li'l Abner," as performed by the students of Frank B. Kellogg High School on November 11, 12, 13, 18, 19, and 20, 1965. Included in this thesis in directing will be song and dance choreographic notes and diagrams and representative examples of all technical aspects of the production, following an initial director's analysis of the production as a whole.

PROCEDURE: The writer carefully read the play "Li'l Abner" by Norman Panama and Melvin Frank. Following the reading of the play, the writer designed the scenery, organized the work schedules, and prepared a rehearsal schedule. The casting of the play was followed by an extensive rehearsal period where a detailed record was kept of all facets of the production.

FINDINGS: During the production period it was discovered that some of the scenery had to be further simplified because of spatial limitations. It was also discovered that some of the songs had to be shortened because of vocal or choreographic limitations. The overall effectiveness of the production was not hindered, however.

SUMMARY AND CONCLUSIONS: The writer/director discovered that "Li'l Abner" lended itself nicely to a production technique that emphasized move-

ment over words. Dogpatch, U.S.A., is populated with colorful, distinctly exaggerated characters--both in the world of Mr. Capp's comic strip, and in the live audio-visual world of the theatre. Secondary school actors can find identity, enthusiasm, and discipline in that world. This was the experience of the writer, and his students, at Frank B. Kellogg High School, St. Paul, Minnesota.

THESIS COMMITTEE: Arthur L. Housman, Chairman; Ellsworth Scott Bryce
DATE OF COMPLETION: August 1967

A STUDY OF SELECTED THEATRICAL DEVICES USED IN THE PUBLISHED PLAYS OF EUGENE O'NEILL

by William Peter Studer

PROBLEM: Eugene O'Neill is an important American playwright. Theatricalism is inseparable from his writing. Therefore, it would seem that a study of selected theatrical devices in his writing is one legitimate means of exploring his overall contribution. It is the purpose of this study, then, to isolate, to organize, and to discuss the significance of selected theatrical elements which appear in the published plays of Eugene O'Neill.

PROCEDURE: The writer carefully read all of the published plays of Eugene O'Neill, excluding the seven, copyrighted, unpublished plays in typescript that are registered at the Library of Congress, and the play, *More Stately Mansions*. This cycle play was recently published by the Yale University Press in 1964, and it contains a device similar to O'Neill's use of the aside. The play is an unfinished work, and until 1957, it was thought to have been destroyed. It was shortened from the author's partly revised script by Karl Ragnar Gierow and edited by Donald Gallup. Because it is not a completed work by O'Neill, it is not included in this paper.

Following the reading of the plays, the writer selected five theatrical elements which were significant in the plays: chorus, masks, asides, ghosts and phantoms, and special effects. Many of the devices found in the works fell into two or more categories. Some of the works were found to contain more than one of the basic five theatrical elements. Therefore, each of the individual plays containing a theatrical element or elements is handled separately and chronologically. The following aspects of each individual production are recorded or discussed in order: (1) plot summary (2) source of the play (3) theatrical elements contained within the play with illustrations of each element (4) summary and synthesis of critical commentary by professional critics, Eugene O'Neill, and the writer, concerning the theatrical elements contained within the play.

Although not all of the sources and critical commentaries in this study relate specifically to O'Neill's use of theatrical devices, it is the writer's position that the consistent presentation of these materials will aid in clarifying the playwright's overall working approach to, and audience reaction to, plays which contain these elements.

FINDINGS: Beginning with *A Wife For A Life* in 1913 and ending with *Days Without End* twenty years later in 1933, Eugene O'Neill's writing called for the use of theatrical elements or devices in fourteen of his forty-four published plays. Choruses are contained in four plays: *The Hairy Ape*, *Mourning Becomes Electra*, *Marco Millions*, and *Lazarus Laughed*. Asides are used in *A Wife For A Life*, *Strange Interlude*, and *Dynamo*. O'Neill used masks in five of his plays: *The Hairy Ape*, *Marco Millions*, *Lazarus Laughed*, *The Great God Brown*, and *Days Without End*. Ghosts and phantoms appeared in *Where The Cross Is Made*, *Marco Millions*, *The Fountain*, and *The Emperor Jones*. Special effects are utilized in five plays: *Welded*, *Marco Millions*, *Lazarus Laughed*, *The Hairy Ape*, and *All God's Chillun Got Wings*. Although the playwright's use of these theatrical devices varied from play to play, each device was, at one time or another, used as a central element of the playwright's creative technique. This was the case in the chorus in *Lazarus Laughed*; asides in *Strange Interlude* and *Dynamo*; masks in *The Great God Brown* and *Lazarus Laughed*; and ghosts and phantoms in *The Emperor Jones*. The reasons for the author's use of these devices varied greatly in individual instances.

SUMMARY AND CONCLUSIONS: Experiment and the use of theatrical elements seemed to be contained in the heart of O'Neill's writing. This observation is applicable to O'Neill when the best of O'Neill's works are investigated. The five plays by him most universally commended by critics over a period of time would seem to be *The Emperor Jones*, *The Hairy Ape*, *Mourning Becomes Electra*, *The Iceman Cometh*, and *Long Day's Journey Into Night*. Theatrical elements were used in three of these plays in varying degrees.

Two plays in which he used theatrical elements most extensively, *Lazarus Laughed* and *Marco Millions*, did not enjoy favorable critical and public reaction.

Experimentation in the use of theatrical elements could be termed one of many of O'Neill's contribution to American and world drama. This contribution occupied a large part of his attention, but it was, perhaps, overshadowed by his stronger qualities.

The use of theatrical devices, then, represented one facet of the creative daring which contributed in large degree to his considerable mark in the history of American theatre.

THESIS COMMITTEE: Arthur L. Housman, Chairman; R. Keith Michael

DATE OF COMPLETION: January 1965

SPEECH IN THE JUNIOR HIGH SCHOOL: A CRITICAL STUDY

by Mary Caroline Knight Takheim

PROBLEM: The problem of this study was to ascertain the place of speech in the curriculum of the junior high school and to determine what should be included in a one-semester speech curriculum at this grade level.

PROCEDURE: Literature was reviewed and analyzed which (1) recommended the teaching of speech in the junior high school, (2) recommended the correlation of speech with other subjects in the junior high school, and (3) related generally to the teaching of speech. The analysis of this literature dictated the plan for the remaining chapters. More broadly related literature was reviewed and compared which indicated (1) the goals of speech education, (2) the characteristic needs of the adolescent, and (3) the functions of the junior high school. Each area was analyzed separately and then the three areas were compared. Curricula from existing programs in speech education were reviewed, a model was chosen, and a curriculum for a one-semester speech course was developed for the junior high school.

FINDINGS: Through the review and analysis of literature specifically related to the teaching of speech in the junior high school, the writer found that speech was not effectively represented in available literature. Much of the literature reviewed seemed to disregard either the junior high school or the junior high school speech program. Through literature broadly related to speech in the junior high school, the writer noted a strong correlation among the goals of speech education, the needs of the adolescent, and the functions of the junior high school. Existing curricula were found to be adaptable to a one-semester speech course for the junior high school.

SUMMARY AND CONCLUSIONS: This study attempted to develop the hypothesis that speech in the junior high school was not effectively represented in the literature and that speech could be effectively introduced into the curriculum of the junior high school. Recommendations and suggestions for a one-semester speech course for the junior high school were made. The writer concluded that an insufficient amount of literature was available to ascertain the place of speech in the curriculum of the junior high school or to prove the feasibility of such a program. It was also concluded that the goals of speech education, the needs of the adolescent, and the functions of the junior high school could be paralleled sufficiently to support the feasibility of a basic speech course for the junior high school.

THESIS COMMITTEE: Arthur L. Housman, Chairman; Ellsworth Scott Bryce

DATE OF COMPLETION: July 1967

A STUDY OF SYNTACTICAL CHANGES OF RESPONSES PRODUCED BY POSITIVE REINFORCEMENT WITH NORMAL SPEAKING CHILDREN

by Robert J. Wedl

PROBLEM: The purpose of this research was to study what syntactical structures the normal speaking child utilizes when he increases the length of one response over the one immediately preceding it.

PROCEDURE: A group of 30 normal speaking students were selected from the second and third grades of St. Mary's Parochial School, St. Cloud, Minnesota. The subjects (Ss) were matched for age, sex, I.Q., and socio-economic status and divided into an experimental and control group with 15 Ss in each group. The groups were exposed to two segments. In segment I, both groups were asked to tell the experimenters something about the picture they were viewing. The pictures were taken from the Occupations Section of the Peabody Language Development Kit. For the control group, segment II was identical to segment I. However, segment II was quite different for the individuals of the experimental group. Whenever they used more words in responding to a picture than they had used for the response immediately preceding it, they were reinforced with a chip which could later be exchanged for a trinket.

FINDINGS: The hypothesis tested was that there are no syntactic components which would appear more frequently than others to account for this increase. This hypothesis was tested at the .05 level of significance. It was found that the Ss utilized seventeen different structures when they increased the number of words. Three of these, prepositional phrases, noun phrases, and independent clauses, appeared to be applied more consistently than the other fourteen. However, after a chi-square analysis, it was evident that none of the structures had been employed significantly.

CONCLUSIONS: Within the limitations of this study, it appears that its methods were not effective. Further research should incorporate the recommended changes.

THESIS COMMITTEE: Joan Jacobson, Chairman; Stanley C. Knox

DATE OF COMPLETION: August 1967

EDUCATION OF MENTALLY RETARDED

A STUDY OF FACTORS INFLUENCING TEACHERS AND PROSPECTIVE TEACHERS TO ENTER THE FIELD OF MENTAL RETARDATION

by Larry L. Anderson

PROBLEM: This study identifies and describes the prospective teachers of the mentally retarded who are actively involved in the certification for a special education minor at St. Cloud State College during the fall term of 1964, and those teachers who are currently teaching the mentally retarded within a seventy-mile radius of St. Cloud, Minnesota. Areas to be included are: (1) motivations for entering the teaching profession, (2) level of professional aspirations, (3) factors influencing the decision to become a special education teacher, and (4) opinions of the certification program.

PROCEDURE: The identification procedures were two-fold in nature. A random sampling of twenty students who had a minor in special education and were enrolled at St. Cloud State College in the fall quarter of 1964, and a random sampling of twenty teachers of the mentally retarded constituted the two groups.

The planned interview schedule used in this study contained items designed to elicit responses directly and openly supply information, while it also contained some items geared to a more subtle or indirect approach.

Data were analyzed by use of the chi-square, percentages, and ranks.

FINDINGS: Major factors influencing the decision to teach were: (1) some background experiences, and (2) opportunities that this interesting and challenging field offers. Persons most influencing the decision to teach special education were: (1) college professors, (2) teachers you know, (3) school administrators, (4) speakers, and (5) relatives and friends not teaching.

The major motivations for entering teaching were "personal satisfactions to be gained" from teaching, which was listed by the teachers; whereas the students most frequently recorded the "personal goals of teaching in special education." The group members felt that: (1) patience, (2) understanding the child and the field, (3) good personality and sense of humor, (4) flexibility, and (5) enthusiasm were the most important characteristics for a special education teacher to possess.

As for professional aspirations, all the teachers considered themselves as career teachers, while over half of the students classified themselves as contingent teachers. About half of the students and around one-third of the teachers plan to obtain a Master's degree. The majority of both the teachers and the students were not sure how long they planned to teach.

The students' comments concerning the certification program were more positive than those of the teachers. The areas covered in the certification program were: (1) strengths, (2) weaknesses, (3) requirements, (4) flexibility, and (5) individual treatment.

SUMMARY AND CONCLUSIONS: Generally the students and the teachers showed many similarities in their interview answers in the areas of: (1) specific factors influencing the decision to become a teacher, and (2) the motivations for teaching. While there were some differences in the area of professional aspirations, the major differences were found in the area of the certification program. With the significant differences in the certification program, the study pointed out that there is a need for changes, additions, and critical analysis of the program.

Several recommendations for further research are included in the study.

THESIS COMMITTEE: Stanley C. Knox, Chairman; Frederick C. Markwardt
DATE OF COMPLETION: August 1965

AN INVESTIGATION OF GRADUATION POLICIES AND JOB REQUIREMENTS FOR EDUCABLE MENTALLY RETARDED STUDENTS

by Wayne Allan Erickson

PROBLEM: This study was designed (1) to determine existing graduation policies that pertain to the mentally retarded; (2) to determine criteria, based on employer requirements for graduation retardates; (3) to determine existing and recommended programs as a basis for graduation; and (4) to discover the degree of agreement between school policies and employer requirements regarding graduation for retardates.

PROCEDURE: Questionnaires were sent to all school districts in Minnesota which have state-reimbursable classes with retardates over fifteen years old. The questions were designed to determine how school graduation policies relate to retardates and to find the basis upon which diplomas or certificates were awarded. Interview schedules were developed to present to possible future employers of retardates. The questions on the interview were designed to match those on the questionnaire so that the degree of agreement between school policies and employer requirements could be determined. The interview questions were used to determine employer requirements and the courses of study the employers considered important.

FINDINGS: (1) Seventy-two per cent of the schools which responded allow the retardates to graduate with some form of certificate or diploma. Sixty-four per cent allow participation in regular graduation exercises. Schools which group homogeneously are more willing to allow students to graduate and participate in graduation exercises. The completion of the special education program is the basis for graduation of sixty-one per cent of the schools. Forty-one per cent of the schools offer no work-study program and all except sixteen per cent of the schools refer their students to an agency such as welfare. (2) Fifty per cent of the employers do not require diplomas. Nonmetropolitan employers place more emphasis on graduation and are more apt to check with the schools than are the metropolitan employers. Employers do not require candidates to show their diplomas and are willing to accept other than a regular diploma when diplomas are required. Employers consider English, communication skills, mathematics, and vocational studies to be important for future employees. Employers are willing to cooperate on work-study programs. Metropolitan employers are more willing to hire employees referred by an agency than are nonmetropolitan employers. (3) A combination of school and employer data reveal that the best program to offer retarded students is one which is divided chronologically into sections, emphasises communication skills in the classroom, and places a great deal of importance on vocational studies and part-time work. (4) The schools and employers appear to be in agreement in all but eight of the areas of comparison. In five of these areas the schools were doing more than the employers required. The areas where the schools were doing less than the employers required were requiring too little communication skills, mathematics, and vocational studies.

CONCLUSIONS: The schools which place all ages of students into the same class need to conduct a major re-evaluation of their program. The State Board of Education rule which prohibits these students from graduating needs to be changed or abolished. All schools need to evaluate their program to determine whether their offerings are in line with the future needs of the students.

THESIS COMMITTEE: Stanley C. Knox, Chairman; Paul E. Ingwell

DATE OF COMPLETION: June 1966

A STUDY OF POSTSCHOOL ADJUSTMENT OF FORMER EDUCABLE MENTALLY RETARDED PUPILS IN ST. CLOUD, MINNESOTA

by Judith Ann Lindall

PROBLEM: The purpose of this study was to evaluate the postschool adjustment of a selected group of educable mentally retarded pupils with respect to

(1) occupational adjustment, (2) occupational mobility, (3) post high school education, (4) marital status, and (5) socio-economic status.

PROCEDURE: The data for this study were obtained in St. Cloud, Minnesota. The subjects were enrolled in the St. Cloud Public Schools during 1953-1960. The chronological age ranged from 19 to 30, with a median chronological age 23.5. The intelligence quotients of the random sample ranged from 47 to 80, with a median intelligence quotient of 70.5. Thirty names were selected from sixty-three total names recorded in the special education files, which consisted of individuals diagnosed as educable mentally retarded. The subjects were visited in their homes to gather information by the interview schedule technique, relevant to family living conditions and to secure a historical description of their educational, military, occupational, marital, financial, community and leisure-time activities. The occupations were rated according to the Minnesota Scale for Paternal Occupations.

FINDINGS: The majority of the subjects clustered around the slightly-skilled and day-laborer classes of all categories of work. The subjects acquired their jobs from newspaper advertisements and through relatives and friends. The average weekly earnings ranged from approximately \$30 to \$75. The majority of the subjects were satisfied with their present jobs and working conditions.

There was a tendency toward job mobility within the community. The duration of each job appeared relatively short. Present jobs of the subjects required more skill and higher pay than those previously held.

The study revealed that none of the subjects had any vocational training prior to actual employment and two had been in the military service.

The majority of the subjects came from the upper-lower and middle-lower socio-economic status groups. Half of the group was self-supporting and were well adjusted contributors to the community. The others lived primarily with parents and relatives. None had migrated or secured employment outside the State of Minnesota.

Only seven females and four male subjects were married and none had serious marital problems. The females tended to marry vertically. The males did not tend to marry as frequently as the females.

SUMMARY AND CONCLUSIONS: The researcher concluded that educable mentally retarded individuals are capable of successful social and occupational adjustment. Successful adjustment apparently depends upon where the individual resides.

The importance of intelligence in the area of occupational adjustment is not the only criterion of adjustment and job success. Occupational success is a reflection of the attitudes and personal characteristics of the worker.

It is debatable whether the students are educable mentally retarded or whether "retardation" is a stigma or administrative label placed upon a group

of individuals who, for reasons unknown, have difficulty competing academically. If one defines retardation in terms of the ability to adjust, this study would question the adequacy of such a label.

THESIS COMMITTEE: Stanley C. Knox, Chairman; Owen O. Hagen

DATE OF COMPLETION: June 1967

A COMPARATIVE STUDY OF TEACHING READING TO MENTALLY RETARDED CHILDREN BY THE TRADITIONAL APPROACH AS OPPOSED TO PROGRAMMED INSTRUCTION

by Janice Paulson

PROBLEM: The purpose of this study was (1) to survey the literature to determine the success of different reading programs for special classes, (2) to review the research on the effectiveness of using programmed reading materials in teaching reading to mentally retarded children, and (3) to compare the level of reading achievement attained by two groups of educable mentally retarded children in special class settings where one group was instructed by traditional reading materials and the other group with programmed reading materials.

PROCEDURE: A survey of literature was made of past studies on traditional and programmed reading programs for educable mentally retarded children.

The comparative study was conducted with subjects from special education classes for educable mentally retarded students in Osseo and Anoka, Minnesota. The control group consisted of nineteen subjects with a mean intelligence quotient of 74.3 and a mean mental age of eight years three months. The students in the control group were instructed by a traditional basal reading series. The experimental group, instructed by programmed workbooks, consisted of twenty subjects with a mean intelligence quotient of 75.7 and a mean mental age of seven years nine months.

The Stanford Achievement Test was given at the beginning and the end of the 1967-1968 school year. The subtests given were Word Reading, Paragraph Meaning, and Vocabulary. In analyzing the data, the mean scores were measured by subtracting the results of the pre- and post-test scores. The significance of differences between the means was tested by using a t-test.

FINDINGS: According to t-test comparisons, no significant differences existed between the control and experimental group on scores obtained in Word Reading, Paragraph Meaning, and Vocabulary.

SUMMARY AND CONCLUSIONS: The review of research on programmed reading suggested that this was a feasible approach in teaching reading to educable

mentally retarded students. The main characteristics of programmed instruction are: active participation of the student, immediate feedback, and finely graded steps to insure mastery of the material.

Even though there were no significant differences between the two groups, there are certain advantages to programmed instruction. One, less teacher time is required in group instruction. Programmed instruction is a way of implementing some instruction and freeing the teacher to plan and determine individual needs. Two, self-instructional devices make allowances for individual differences by permitting students to proceed at their own pace. Three, the immediate reinforcement from programmed instruction can be a motivating factor for learning.

THESIS COMMITTEE: Stanley C. Knox, Chairman; William E. Lovelace

DATE OF COMPLETION: July 1968

AN EXPLORATORY STUDY TO DETERMINE VIEWS TOWARDS THE MENTALLY RETARDED

by Mary Barke Petersen

PROBLEM: Approximately three per cent of the children born each year are mentally retarded. The nature of the contacts these people will have with their neighbors and communities and the number and quality of the services they will receive depends upon the attitudes of those around them. The problem that brought about this study was to determine just what attitudes, beliefs, and opinions are held about mental retardation.

PROCEDURE: After a review of the literature on mental retardation and on values and attitudes was completed, a questionnaire was designed by the author which contained fifty statements concerning mental retardation. There were five possible responses to each statement, strongly agree, agree, undecided, disagree, and strongly disagree.

The questionnaire was administered to two organized groups of parents, one group containing parents of mentally retarded children and the other parents of children of normal intelligence. The two organized groups which agreed to participate were local affiliates of the Association for Retarded Children and the Parent-Teachers Association.

A chi-square analysis was performed upon the total tabulations of each question, with a score of .05 or below indicating a significant difference between the two groups.

FINDINGS: Of the fifty statements on the questionnaire, only eight resulted in a significant difference. The greatest amount of agreement between the

two groups occurred when statements were concerned with beliefs about the causes of mental retardation, the behavior of the mentally retarded, and the needs of the retarded, at least when statements were expressed in general terms. The main differences between the two groups were: (1) The Parent-Teachers Association participants were more strongly in agreement with the statement that the mentally retarded should be institutionalized than the Association for Retarded Children respondents. (2) The Parent-Teachers Association participants tended to agree with a belief that the mentally retarded are a financial burden while the other group did not. (3) The Parent-Teachers Association expressed some reluctance to pay for better facilities in Minnesota's institutions as compared to the responses of the other group.

There was also some disagreement between the two groups concerning whether or not the mentally retarded should be punished, whether or not the mentally retarded are aware of their condition, and on whether or not medical science has found a way to prevent mental retardation.

SUMMARY AND CONCLUSIONS: Based upon the findings of this study, it cannot be said that the attitudes of the public, as represented by the Parent-Teachers Association participants, are derogatory towards the mentally retarded. The most important area of difference between the two groups tested was concerned with finances. Apparently, even though the Parent-Teachers Association participants were sympathetic to the needs of the mentally retarded when quizzed in generalizations, they are somewhat unwilling to pay for the facilities that would serve the interests of the mentally retarded.

What should now be done is for further studies of this kind to be carried out, embracing more groups of people and refining the questions asked. After these studies are completed, interested organizations, such as the Association for Retarded Children, could use the findings to do a more effective job of disseminating public information and perhaps of convincing the public to support the necessary programs for the welfare of the mentally retarded.

THESIS COMMITTEE: Harold Lieberman, Chairman; Stanley C. Knox

DATE OF COMPLETION: August 1965

AN EXPERIMENTAL INVESTIGATION OF THE ILLINOIS TEST OF PSYCHOLINGUISTIC ABILITIES WITH NON-VERBAL CHILDREN

by Lenore Sowada

PROBLEM: It was the purpose of this study to measure gains in language ability on the Illinois Test of Psycholinguistic Abilities as a result of a language development program with non-verbal children.

PROCEDURE: Twenty-two children were referred by the kindergarten teachers in the St. Cloud Public School District as having delayed language. These children were then screened by the speech clinician serving that particular building and evaluated by another speech clinician. Eleven of the twenty-two children were randomly selected to participate in the program with the remaining eleven serving as a control group.

The twenty-two children were pre-tested with the ITPA to determine the specific area in which each child was having his main problems in language ability. The remediation program was based on the results obtained from the ITPA.

The language program sessions were held on Saturday mornings for one and one-half hours and were composed of intensive language experiences for children delayed in speech and language, emphasizing the quality and quantity of both receptive and expressive abilities.

The program lasted for approximately twenty-one weeks. At the end of this program all of the children were post-tested with the ITPA and the t-test was used for matched pairs to compare differences in improvement scores.

FINDINGS: The analysis of the pre-test and post-test data revealed no significant difference at the .05 level of confidence between the experimental group and the control group on the following subtests: Auditory-Vocal Automatic, Visual Decoding, Motor Encoding, Auditory-Vocal Association, Visual-Motor Sequential, Vocal Encoding, Visual-Motor Association and Auditory Decoding.

The data did reveal a significant difference at the .05 level of confidence between the experimental group and the control group on the subtest Auditory-Vocal Sequential and on the Total Raw Scores.

SUMMARY AND CONCLUSIONS: Twenty-two children were involved in the investigation with eleven in the control group and eleven in the experimental group. All of the subjects were pre-tested and post-tested with the ITPA: the experimental group received an intensive language development program for twenty-one weeks.

The investigation revealed that the control group made greater gains than the experimental group in every subtest area. The gains made by the control group were significant at the .05 level of confidence in only the following areas: Auditory-Vocal Sequential and Total Raw Scores.

THESIS COMMITTEE: Stanley C. Knox, Chairman; William E. Lovelace

DATE OF COMPLETION: July 1968

THE SOCIAL POSITION OF EXCEPTIONAL CHILDREN IN THE INTERMEDIATE GRADES AS A FUNCTION OF REGULAR OR INTEGRATED CLASS PLACEMENT

by Alan K. Swedberg

PROBLEM: The purpose of this study was to investigate the social position of certain categories of exceptional children who were enrolled in the regular classroom for varying lengths of time.

PROCEDURE: The sociometric scale "Who Are They?" was administered to 1,561 children from the fourth, fifth, and sixth grades of the St. Cloud Public Schools. Of these children 1,353 were classified as normals, 101 were classified as speech handicapped, 91 were classified as special learning disability, and 16 were classified as educable mentally retarded. Classroom teachers rated each student on the "Pupil Behavior Rating Scale." The data obtained for the previously mentioned scales were directed toward the testing of the following null hypotheses: (1) There will be no significant difference in the social position between exceptional children and normal children as they relate to their peers, as measured by visual and valence questions on a sociometric scale. (2) There will be no significant difference in the social adjustment characteristics between exceptional children and normal children, as measured by teacher observation on a teacher rating scale. (3) There will be no significant difference in the social position between groups of exceptional children, as measured by visual and valence questions on a sociometric scale.

The median test was employed to determine any significant differences in the samples. The .05 level of confidence was used to accept or reject the null hypotheses.

FINDINGS: The following findings were found to be significant: (1) Exceptional children displayed more inadequate social adjustment than normal children as indicated by the sociometric scale. (2) Normal children have more appropriate social adjustment characteristics than exceptional children as observed by the classroom teacher. (3) Speech handicapped children displayed more adequate social adjustment than special learning disability children as indicated by the sociometric scale. (4) Analysis of the data relating to special learning disability children revealed that those students classified as general tutorial were less socially adjusted than those students classified as reading disability.

SUMMARY AND CONCLUSIONS: The results of the sociometric scale agree with the majority of research examining the social position of exceptional children which states exceptional children are less socially accepted by

their peers than normal children. The results of the data obtained from the "Pupil Behavior Rating Scale" tend to indicate normal children as a group display better social adjustment characteristics, whereas exceptional children as a group indicate more inadequate social adjustment characteristics when rated by their classroom teacher. The results of the "Pupil Behavior Rating Scale" seem to indicate a relationship between social position within a classroom and social adjustment characteristics.

Between groups of exceptional children, speech handicapped children appear to hold a higher social position within a classroom, and the special learning disability children appear to hold the lowest social position of the exceptional children studies. Examination of the median length of time that each group is separated from the regular classroom tends to indicate the longer an exceptional group was separated from the normal classroom for special education services, the lower their social position.

THESIS COMMITTEE: Stanley C. Knox, Chairman; William E. Lovelace
DATE OF COMPLETION: June 1969

A COMPARATIVE ANALYSIS OF EMPLOYED AND UNEMPLOYED EDUCABLE MENTALLY RETARDED INDIVIDUALS IN RURAL MINNESOTA AS REPORTED BY VOCATIONAL ADJUSTMENT COORDINATORS

by James Alan Szarke

PROBLEM: This study investigated the differences in backgrounds of educable mentally retarded individuals who were rehabilitated and those who were not rehabilitated as reported by rural Minnesota vocational adjustment coordinators. The background includes: (1) educational background, (2) work history, (3) marital status, (4) family background, and (5) community background of the closures.

PROCEDURES: The population for this study included fifty rehabilitated closures and seven nonrehabilitated closures who were educable mentally retarded individuals in one of nine rural Minnesota vocational adjustment coordinator programs prior to July 1, 1967. The vocational adjustment coordinators completed a single questionnaire for each closure in their case load. The chi-square was applied to responses. It was hypothesized that there would be no significant difference between the two groups on any item of the questionnaire. If the obtained chi-square was significant at the .05 level or less, the null hypothesis was rejected.

FINDINGS: Similarities in educational background between the two groups existed in (1) number of years enrolled in special education, (2) type of secondary special education program in which enrolled, (3) criteria used as a basis for program completion, and (4) program completion success. The unemployed group entered special education at a significantly earlier age than did the employed group.

The number of work experiences prior to work study did not vary significantly between the groups. However, it was felt that half of the employed group would benefit from further vocational or personal adjustment training while all unemployed members would benefit from this training. This differed significantly.

Most members in the study were not married.

Parents in both groups had similar educational backgrounds and occupations. The clients' order of birth, number of siblings, and known number of mentally retarded siblings were similar in both groups.

Community backgrounds did not differ between the employed and unemployed groups.

SUMMARY AND CONCLUSIONS: This study sought to determine educational background, work history, marital status, family background, and community data on educable mentally retarded employed and unemployed closures in rural Minnesota. A comparative analysis was made which revealed similarities between the two groups in the reported areas of concern. Two significant differences were reported. The unemployed group entered special education at an earlier age and required additional training to a greater extent than did the employed group.

THESIS COMMITTEE: Stanley C. Knox, Chairman; William E. Lovelace

DATE OF COMPLETION: August 1968

A PILOT PROGRAM ON LANGUAGE DEVELOPMENT FOR CEREBRAL PALSID CHILDREN

by Susan Jean Tillmans

PROBLEM: The purpose of this study was (1) to see if the tests were sensitive enough to detect any growth which might accrue during the period of one school year, and (2) to determine any growth of language development beyond that normally expected with cerebral palsied children when subjected to an intensive language development program.

The hypothesis that there was no significant difference in pre- and post-test scores on the Peabody Picture Vocabulary Test (PPVT), the nine subtests

of the Illinois Test of Psycholinguistic Abilities (ITPA), and the ITPA total was tested.

DESIGN AND SAMPLING: The subjects were seven children, five girls and two boys, ages six to twelve, enrolled in the Cerebral Palsy Class at the Thomas J. Gray Campus Laboratory School in St. Cloud, Minnesota.

The investigator used the Peabody Language Development Kit (PLDK) in her classroom as part of the language arts program.

MEASURING DEVICES: Each of the seven subjects in this study was tested individually with the ITPA and the PPVT at the beginning and at the end of the 1966-67 school year.

The Wilcoxon T-Test was computed for the nine ITPA subtests, the ITPA total, and the PPVT. The hypothesis was rejected if the level of significance was .01 or less.

RESULTS: The null hypothesis was rejected for (1) the ITPA auditory-vocal association subtest, (2) the ITPA vocal encoding subtest, and (3) the ITPA total. It was concluded that there was a significant difference between the pre-test and the post-test scores on these tests. They were significant at the .01 level.

The null hypothesis was accepted for (1) the ITPA auditory decoding subtest, (2) the ITPA visual decoding subtest, (3) the ITPA visual-motor association subtest, (4) the ITPA motor encoding subtest, (5) the ITPA auditory-vocal automatic subtest, (6) the ITPA auditory-vocal sequencing subtest, (7) the ITPA visual-motor sequencing subtest, and (8) the PPVT. It was concluded that there was no significant difference between the pre-test and post-test scores on these tests.

The overall language age gain, as tested by the ITPA, was eleven months.

INTERPRETATIONS: The PDK apparently was an effective language development program to use with handicapped children. A continuation of a language development program would perhaps be beneficial in increasing the overall language age and skills of handicapped children. A longer period of time may be needed to insure permanent gains. The results obtained are indicative of possible applications of the PDK as a supplement in the total language arts program.

THESIS COMMITTEE: Stanley C. Knox, Chairman; Eva Cook

DATE OF COMPLETION: August 1967

A COMPARATIVE STUDY OF TEACHING READING TO EDUCABLE
RETARDED CHILDREN USING MATERIALS WRITTEN IN
TRADITIONAL ORTHOGRAPHY AS OPPOSED TO TEACHING
READING WITH MATERIALS WRITTEN IN THE ROMAN
AUGMENTED ALPHABET (I.T.A.)

by Beverly Timmers

PROBLEM: The purpose of this study was to compare and evaluate the effectiveness of reading instruction materials written in traditional orthography and ITA in working with educably retarded children.

PROCEDURE: Two groups of children from the Duluth school system were given a concentrated reading program in a Special Learning Problem class under the instruction of the same teacher. One group was given reading instruction with materials written in ITA, and the second group was instructed with materials written in traditional orthography. The Gates Reading Survey Tests were administered and the t-test used to ascertain differences mean gain scores on vocabulary and comprehension.

RESULTS: The t-test for significance of difference between the means on intelligence tests showed no significant difference between these groups on measured ability and the data on reading achievement were analyzed with the assumption that any differences were not due to differences in ability.

The comparison of groups on vocabulary scores showed a significant difference in the group instructed in ITA materials over the group instructed in materials written in t.o. It was concluded that the gain was greater when the group was instructed with materials written in ITA. The difference between the mean gain scores on tests given to determine comprehension was not significant, and it was concluded that there was no difference between these two groups on gains on reading comprehension.

SUMMARY: Review of previous research indicated that more studies were needed in the area of reading instruction for mentally handicapped children. The results obtained were indicative of probable application in reading programs for the educable retarded child. Reading materials written in ITA would perhaps be beneficial in building vocabulary, particularly with younger retarded children. Reading instruction materials written in ITA would also perhaps profit individual retarded children who are behind in vocabulary development if there is an early gradual transition to reading materials written in t.o. to insure reading comprehension.

THESIS COMMITTEE: Stanley C. Knox, Chairman; Hugh Schoephoerster

DATE OF COMPLETION: June 1966

A STUDY OF POLICIES AND PROCEDURES USED FOR THE SCHOOL PLACEMENT OF EDUCABLE MENTALLY RETARDED CHILDREN IN MINNESOTA

by Michael Frank Trepanier

PROBLEM: The purpose of this research was to discover the policies and procedures which administrators in Minnesota follow regarding the identification, evaluation, and placement of children in classes for the educable mentally retarded. Administrators were also asked to evaluate parental attitudes.

PROCEDURE: A questionnaire was developed and sent to each school district in the State of Minnesota which had offered classes for educable mentally retarded children in 1965-66, and were supported by state monies. Out of a population of 227, 221 returned the questionnaire. This was a return of 97.4 per cent. Portions of some questionnaires were not used because the respondent had not followed directions.

FINDINGS: (1) Administrators felt that teacher referral was the most important tool they had for initial identification of educable mentally retarded children. (2) The psychologist's recommendation was considered the most important factor when a decision concerning special class placement was to be made. (3) Special class teacher, psychologists, and building principals appear most often on placement committees. (4) Superintendents and building principals made the final decision of placement in the great majority of cases. (5) More than half of the children are re-evaluated every three years.

SUMMARY AND CONCLUSIONS: In Minnesota provisions have been made for educating the mentally retarded for over fifty years. These programs have gained momentum only since the passage of the mandatory special education law in 1957.

In order to evaluate and place a child, he must first be identified. This is not easy, for there seems to be only two interrelated differences that are common to educable children and which tend to identify them as a group. They have a slower rate of learning and are academically below their expected chronological grade level. A tentative identification may occur as a result of teacher referral, group testing, the child's health and medical records, and parental or agency referral.

After a child has been tentatively identified, he must be intensively evaluated. This should include health and medical examinations, an individual psychological examination, social history, school adjustment, and any additional information necessary. A final decision of placement will be based on the belief that this action is best for the child.

Administrators felt that most parents understood their child's problem. They also mentioned the change in overall attitudes in their communities within the last few years. Administrators also felt that of those parents who understood their child's problem, an overwhelming majority accepted the recommended placement.

The training program for prospective administrators should include preparation for dealing with problems of exceptional children.

Additional research should be conducted relative to the early identification of educable mentally retarded children.

Additional research should be conducted relative to the advantages and disadvantages of special class placement.

THEIS COMMITTEE: Stanley C. Knox, Chairman; William E. Lovelace

DATE OF COMPLETION: June 1967

A COMPARATIVE STUDY OF CONCEPT FORMATION AS MEASURED BY THE DOUBLE ALTERNATION PROBLEM

by Robert Welton

PROBLEM: Research in the area of concept formation and conceptual behavior has in recent years been virtually nonexistent. This is surprising from the educational standpoint. With the tremendous growth and development in special education programs for retarded children, it is imperative that educators gain a better and more thorough understanding of concept formation for both normal and retarded children.

The purpose of this investigation was to determine whether or not there are differences between normal and educable mentally retarded children to form concepts when measured by the double alternation problem.

The double alternation problem is a generally accepted technique for measuring comparative reasoning or concept behavior in human and infrahuman subjects. The dynamics of the problem are as follows:

The subject is presented with a number of choices in solving the problem. He is then called upon to respond twice to the left-most choice and then twice to the right-most choice in order to receive a reward. The subject has met the criterion of success in solving the double alternation problem when he has developed the concepts that the correct response is located on the end choice, and that it is twice on each end. The pattern of response would be left left right right left left right right.

PROCEDURE: Two sample groups of twenty-five normal and twenty-five retarded public school children with mental age held constant where administered the double alternation problem. Mental age was held constant by matching

the mental age of each mentally retarded child with the mental age of a normal child. Mental age for both groups was calculated from results obtained from the Kuhlmann-Anderson Intelligence Test administered thirty days prior to the experiment.

Assuming the existence of a high correlation between mental age and the ability to solve the double alternation, it was hypothesized in the null form that there would be no difference between the normal and retarded groups in the ability to solve the problem.

The double alternation card test, which is an adaption of the double alternation problem, was utilized in the present study. The experimenter replicated the method and procedure used by Allen Hodges in an unpublished doctoral dissertation.

There were seven quantitative scores that can be derived from the double alternation card test. Six of the seven were employed in the present study. They are as follows: Success vs. Failure; Verbalization or Non-verbalization; The Number of Total Trials Score; The Number of Total Errors Score; The Number of Errors Prior to the Development of the End Concept; and The Number of Errors After the Development of the End Concept.

To arrive at any pertinent conclusions and to compute statistical data, the chi square and the t-tests were employed. The .01 level of confidence was used to accept or reject the null hypothesis for all six scores.

FINDINGS: The results obtained from the analysis of the data revealed that there was no significant differences between the normal and retarded subjects on five of the six hypotheses, relative to the solution of the double alternation problem, and therefore five of the six hypotheses were accepted as they were stated.

The sixth hypothesis dealing with the ability to verbalize the solution of the double alternation revealed a significant difference between the normal and retarded groups at the .01 level of confidence, and thus the null hypothesis was rejected.

SUMMARY AND CONCLUSIONS: The only significant differences between the normal and retarded groups appeared in the ability to verbalize the solution of the double alternation problem. Fifteen of the normal children and fourteen of the retarded children met the criterion of success in solving the double alternation problem. Of the fifteen normal subjects who solved the problem, eleven were able to verbalize how they solved it. On the other hand, only two of the fourteen retarded children solving the double alternation problem could verbally state to the examiner how he or she solved it. It was concluded that the retarded group met the criterion of success in solving the double alternation problem as well as the normal group; however, they could not verbally explain how they solved it.

THESIS COMMITTEE: Stanley C. Knox, Chairman; Paul E. Ingwell

DATE OF COMPLETION: June 1967

ELEMENTARY SCHOOL ADMINISTRATION

DEVELOPMENT OF A PROPOSED TESTING PROGRAM FOR SANDSTONE ELEMENTARY SCHOOL, DISTRICT 578, SANDSTONE, MINNESOTA

by Peggy Billman Cahoon

PROBLEM: The purposes of this study were (1) to examine the literature on testing in the elementary school, and (2) to develop and recommend to the staff of the Sandstone Elementary School a testing program for their study and consideration.

PROCEDURE: Sources of information on elementary tests were first sought. One of the sources was the publishing companies of the tests. Copies of every test and their accessories were obtained for all the tests cited in the study. Evaluations of the tests were obtained from the Fifth and Sixth Editions of *Buros' Mental Measurements Yearbook*. Textbooks and professional magazine articles also provided information on steps to establishing a testing program, the criteria for selection of tests, the time of administration, and the in-service training of teachers.

Eighteen tests were reviewed for the study. They were as follows: individual mental ability, four tests; group mental ability, seven tests; achievement, four tests; reading readiness, two tests; and personality, one test.

FINDINGS: The tests which the writer will recommend to the faculty of the Sandstone Elementary School for their study and consideration are as follows:

Group Mental Ability Test

Grades one and two: *Otis Self-Administering Test of Mental Ability*. The reasons for selection are: (1) the test provides for both verbal and non-verbal scores, and (2) the test questions depend on the child's ability to think rather than simply to recall facts.

Grades three through six: *Henmon-Nelson Test of Mental Ability*. Reasons for selection are: (1) two forms are available, (2) short testing time, (3) easily scored, (4) conversion of raw scores to other scores, (5) careful item analysis, (6) high correlation coefficients with other tests, (7) clearly defined norm population, and (8) excellent manuals.

Individual Mental Ability

Grades K-6: *Either Stanford-Binet Scale or the Wechsler Scales*. Reasons for selection are: (1) excellent background information, and (2) there are teachers in the system that have special training to administer these tests.

Achievement Tests

Grades one and two: *Metropolitan Tests*. Reasons for selection are: (1)

the tests reflect the curriculum; and (2) the manual provides ample information on interpretation, reliability, and validity of the tests.

Grades three through six: *The Iowa Test of Basic Skills*. Reason for selection is that the purpose of the tests is to measure how well the child has mastered the basic skills that largely determine the extent to which he can profit for later instruction.

Reading Readiness

Lee-Clark Reading Readiness for the latter part of kindergarten. Reason for selection is that this test yields a total score and three part scores which are letter symbols, concepts, and word symbols.

Personality

California Test of Personality. Reason for selection is that the test is designed to identify and reveal the status of certain highly important factors in personality and social adjustment usually designated as intangibles.

CONCLUSIONS: Recommendations for the use of specific tests have been made to the Sandstone Elementary Faculty for their consideration in a testing program. The areas in which tests have been recommended are mental ability, achievement, reading readiness and personality. Recommendations have been made for children who present special problems and require facilities for more intensive study.

Anyone using standardized tests realizes there can be overemphasis on the precision of numbers. Mistakes and misunderstandings can arise from misinterpretations of the results. Extreme care should be exercised in the selection and interpretation of tests.

THESIS COMMITTEE: James W. Anderson, Chairman; Thomas C. Park

DATE OF COMPLETION: July 1967

A STUDY OF THE SUPERVISORY ROLE OF THE ELEMENTARY SCHOOL PRINCIPAL IN THE AREA OF ST. CLOUD

by Sister Mary Andrew Dulski, O.S.F.

PROBLEM: The purpose of the study was (1) to review the literature pertaining to the development of the supervisory role of the elementary school principal; (2) to make a survey of the current practices of the elementary school principals of the schools in the St. Cloud area; and (3) to provide recommendations for future supervisory practices for elementary school principals in the St. Cloud area.

PROCEDURE: The data for this study were obtained by: (1) questionnaire submitted to the twenty-two elementary school principals of the St. Cloud area, which included principals of the elementary schools in St. Cloud, St. Augusta, St. Joseph, Waite Park, Sauk Rapids and Sartell, and (2) a review of the literature and research relating to the supervisory practices of the elementary school principal from the beginning of the role of principalship to the present day.

FINDINGS: The study revealed that eighty-six per cent of the responding principals were supervising principals with an average of sixteen teachers in their schools. Of the supervising principals, eight, or forty-two per cent, had at least one full time secretary, and of the teaching principals, one, or thirty-three per cent, had one full time secretary. Seventy-nine per cent of the supervising principals did no teaching but indicated they spent forty-two per cent of their time in administration and clerical duties and only thirty-three per cent in supervision and pupil guidance. Teaching principals were able to spend only about thirty-five per cent of their time on the duties of the principalship with only seven per cent in supervision. All of the principals indicated they did general supervisory activities and all of the principals checked "worked with the staff to meet the needs of the children in the school" as the most frequent type of supervisory activity. The principals as a group did the least work in conducting research experiments and studies in the school and only about one-half of the principals worked with groups of teachers on problems of their own choosing. While supervising principals felt they were least effective in conducting research studies on school problems and most activities which required the involvement of teachers, teaching principals indicated they felt very ineffective in almost all the supervisory tasks listed.

SUMMARY AND CONCLUSIONS: The professional literature recommends that supervising principals spend fifty per cent of their time on supervision and that teaching principals spend fifteen per cent of their time on supervision. The principals as a group showed they realized that the job of the principalship was growing and that they were trying to meet the demands. The principals felt they were ineffective in many areas. The amount of time that the principal was free from teaching, administrative and clerical routine, had a significant influence on the type of supervisory techniques and activities he was able to carry out.

It seems impossible for one person to do the job of the principalship as it exists today. The principal will be more effective in his most important role of supervision only when he studies the historical development of the role of principalship so that he can gain a fuller understanding of the principal's supervisory responsibilities as they are today, when more administrative and clerical assistance is given him, when able teachers are involved in supervisory activities that are cooperative in nature, when modern devices such as

closed-circuit television, video tape and kinescoped films are used for instructional improvement, when more use is made of resource personnel and when increased attention is given to the value of the assistant principal who could relieve the principal of much of his administrative burden. Principals, individually and through professional organizations, should strive to inform school boards and school officials of the importance and needs of the principalship so that more principals will be freed from classroom teaching and more clerical and special personnel will be supplied.

THESIS COMMITTEE: James W. Anderson, Chairman, Roger L. Rouch

DATE OF COMPLETION: July 1968

A STUDY OF THE DUTIES OF ELEMENTARY SCHOOL PRINCIPALS IN RELATION TO THE SPECIALISTS

by Burton Meyer Katz

PROBLEM: It was the purpose of this study (1) to show what duties principals are now carrying out in relation to the specialists; (2) to see if principals were subject to similar duties in working with specialists; (3) to find the amount of time that has been and is felt should be allotted to effectively help the specialists carry out their role; and (4) to assemble a composite list of duties to which the principal could refer as an aid towards doing a more effective job in helping the specialists accomplish their goals.

PROCEDURE: A survey questionnaire was sent to principals in nineteen suburban school districts in the Twin Cities area. Of the districts selected approximately 50 per cent of the principals in each district were randomly selected to represent the total population. This gave a total of eighty-two possible respondents.

The questionnaire contained three main headings: (A) Types of Specialists; (B) Duties of Principals; and (C) Time Devoted to Specialists Per Week.

There were thirty-three questions in the main part of the questionnaire with a simple "yes" or "no" answer. Space was provided under each question titled "clarification." It was felt that this type of question would get a better response from the principals. This was verified by the 90 per cent reply.

The questionnaires were then tabulated and analyzed.

FINDINGS: Some of the important findings derived from an analysis of principals' responses included: (1) The six most commonly used specialists in the Twin Cities suburban schools questioned were the speech correctionists, remedial reading teacher, nurse, school psychologists, teachers of exceptional or handicapped children, and the social worker. (2) Of the buildings ques-

tioned, 16 per cent have their own speech correctionist, 27 per cent have their own remedial reading teacher, and 15 per cent have their own school psychologist. (3) Of the buildings that share specialists, 84 per cent have speech correctionists, 78 per cent have school psychologists, and 31 per cent make use of social workers. (4) Ninety-seven per cent of the principals play a part in selecting pupils for referral to the specialists. (5) All of the principals (100 per cent) plan with the specialists as to when they can schedule classes. (6) Most of the principals would spend more time with their specialists if the time were available. (7) If more time were available in working with the specialists, principals would spend it working in two major areas: child-centered and program-centered.

SUMMARY AND CONCLUSIONS: An analysis of the questionnaire data revealed the following conclusions: (1) Most principals play an active part in helping the specialists select pupils who will receive help. (2) The principal depends upon the classroom teacher to help in the referring of pupils to be considered for special help. (3) Principals will assist in making recommendations for therapy of children referred to the school psychologists more than to the remedial reading teachers or speech correctionists. (4) It was not felt necessary by principals that recommendations for therapy needed to be compared with other like specialists, in most cases. (5) Principals are spending some of their time in the classroom observing the special classes. (6) There is negligence on the part of the principals in evaluating the programs of the specialists at the end of the year, since only 40 per cent of those questioned do partake in this procedure. (7) Establishing human relations between specialists, teachers, and the parents plays an important part in the successful operation of a school's program.

THESIS COMMITTEE: James W. Anderson, Chairman; Thomas C. Park

DATE OF COMPLETION: August 1968

AN APPRAISAL OF THE EARLY ENTRANCE PROGRAM IN THE EDINA PUBLIC SCHOOLS

by A. Pauline Lofgren

PROBLEM: The purpose of this study was (1) to appraise the academic achievement through achievement test scores, teacher rating and marking; and (2) to appraise the general adjustment of the children who were admitted early on the basis of high IQ scores into kindergarten in the Edina Public Schools.

PROCEDURE: To appraise the early entrance program, the presentation of material was organized as follows: (1) an explanation of the criteria used for

early entrance, (2) descriptive statistical data for each year, (3) the achievement tests, (4) the presentation of data on the achievement tests, (5) teacher evaluation of personality traits, and (6) teacher rating of rank in class.

FINDINGS: In kindergarten the Metropolitan Readiness raw score median indicated that the boys scored higher than the girls.

The Metropolitan Achievement Test grade equivalent medians in grades one and two were approximately the same for the early entrants and the other Edina first and second graders in arithmetic and reading. Grade two reading was an exception where early entrants' medians were higher. There was no difference between boys' and girls' medians in arithmetic, but the girls' medians were higher in reading.

The Iowa Test of Basic Skills in grades three, four, and five showed that the grade equivalent medians in reading and the composite score were higher for the early entrants than for other Edina students. Composite grade equivalent medians were the same for both sexes in grade three, but the boys' medians were higher in grades four and five. Girls had higher reading medians in grades three and five, but the boys' reading medians were higher in grade four.

The teacher ratings on personality traits revealed that the early entrants rated significantly lower on dependability and initiative than on other traits.

The overall achievement was appraised through teacher ratings of rank in class and showed that 65.5 per cent of the early entrants were in the middle 60 per cent of the class range. About one-fourth were in the upper 20 per cent and approximately 9 per cent were in the bottom 20 per cent of their class.

SUMMARY AND CONCLUSIONS: It was concluded that there was a relationship between chronological age differences and achievement at the first and second grade level, and that this relationship declined as the early entrant progressed through the elementary grades.

The study on sex differences revealed that the girls usually achieved at a higher level than the boys in reading. However, the boys were ahead of the girls in composite score medians.

Teacher rating on personality traits indicated that early entrants rated lower on dependability, initiative, and self-control than other traits.

It appeared that there was a relationship between school entrance age and academic standing in class, as almost two-thirds (65.5 per cent) of the early entrants were just average or in the middle 60 per cent of the class range.

THEIS COMMITTEE: James W. Anderson, Chairman; Roger L. Rouch

DATE OF COMPLETION: March 1968

ACADEMIC ACHIEVEMENT IN THE LAST FORTY-FIVE QUARTER HOURS OF THE UNDERGRADUATE PROGRAM AS A CRITERION FOR PREDICTING ACADEMIC ACHIEVEMENT IN THE MASTER OF SCIENCE PROGRAM AT ST. CLOUD STATE COLLEGE

by John S. Malmberg

PROBLEM: The purpose of the study was twofold: (1) To determine whether students from various types of undergraduate backgrounds were significantly different in grade point average change from the last forty-five credits of the undergraduate program to the Master of Science Program at St. Cloud State College, and (2) attempt to predict the grade point average a student may achieve in the Master of Science Program at St. Cloud State College.

PROCEDURE: The sample consisted of 269 students who have completed the Master of Science Program at St. Cloud State College, either in elementary education or secondary education.

For purposes of the study, students were identified as to the type of college in which they completed their undergraduate degree: Minnesota Private Colleges, Minnesota State Colleges, University of Minnesota, and colleges from outside the State of Minnesota. Two divisions were made within each sub-group: students who completed undergraduate degrees within four years of elapsed time from date of first course enrollment, and students who completed undergraduate degrees in more than four years of elapsed time.

The prediction of graduate grade point averages was based on the type of undergraduate college, the elapsed time for earning the undergraduate degree, and the proposed area of study in the Master of Science program. Using the undergraduate and graduate grade point average means and standard deviations for each sub-group, undergraduate grade point averages were converted to z-scores and then to predicted graduate grade point averages.

FINDINGS: The highest undergraduate and graduate grade point averages were found in the students who graduated within four years from the University of Minnesota.

Standard deviations of undergraduate grade point averages ranged from .17 to .51, and from .16 to .32 for graduate grade point averages.

Correlations between undergraduate and graduate grade point averages for the sixteen sub-groups ranged from -.53 to .75. The most consistent correlations were found in the Minnesota State College sub-groups, in which correlations ranged from .44 to .62.

The predicted graduate grade point averages ranged from 2.35 to 4.00. Undergraduate cutoff points required to predict a 3.00 graduate grade point average ranged from 1.62 to 2.49.

Each of the fifty-four hypotheses stated that the difference between the undergraduate and graduate mean grade point averages for one sub-group minus the difference between the two means for a second sub-group was equal to zero. One hypothesis, which compared students from Minnesota State Colleges who completed Secondary Education Graduate Programs with students from the University of Minnesota who completed Secondary Education Graduate Programs, could be rejected at the .05 level. Four other hypotheses could be rejected at the .20 level.

SUMMARY AND CONCLUSIONS: From the evidence presented in the study it would appear that admissions officials at St. Cloud State College could not justify varying admissions standards for graduate students seeking the Master of Science Degree based on the students' type of undergraduate college, the elapsed time taken in earning their bachelor's degrees, or whether the students proposed to do their graduate study in elementary or secondary education programs.

Perhaps a means of measuring commitment to scholarly work, and future high level job performance as predicted by various instruments are two criteria that should receive further study by graduate admissions officials.

THESIS COMMITTEE: James W. Anderson, Chairman; Thomas C. Park

DATE OF COMPLETION: July 1968

AN APPRAISAL OF PROMOTION AND RETENTION POLICIES IN ELEMENTARY SCHOOLS OF CASS COUNTY, MINNESOTA 1962-1963

by Vivian Marie Murphy

PROBLEM: The purpose of this study was to (1) conduct a comprehensive review of research on elementary school promotion and retention policies; (2) collect data pertaining to policies of promotion and retention from Cass County elementary schools; (3) and make the findings of the study regarding promotion and retention policies available to schools in Cass County and other schools interested in using the information.

PROCEDURE: Information for this study was obtained from a comprehensive review of research and professional literature. A prepared check list type questionnaire was sent to eighty-nine principals and teachers in Cass County, Minnesota. The data from fifty-five, or approximately 62 per cent, of the completed surveys were tabulated and percentages figured, analyzed and interpreted in relation to the established purpose of the study.

FINDINGS: Following are some of the significant findings of the study: (1) The simple symbol or letter type A, B, C, D, F marking system is used in the majority of schools according to 86 per cent of the principals and 73 per cent of the teachers. (2) The majority of the principals and teachers commented that if pupils were retained only once, retention was in the first three grades. When retained more than one year pupils might be retained in any one of the six grades. (3) Conditional or trial promotions are used, but for the majority of failing pupils, conditional promotions usually result in promotions. (4) Eighty-six per cent of the principals and 93 per cent of the teachers claim they notify parents during the term of possible failure. (5) Forty-three per cent of the principals and 87 per cent of the teachers fail students mostly on the basis of lack of mastery of academic subjects. (6) Principals and teachers do not favor social or chronological promotion of low achievers on the basis of effort. (7) Forty-three per cent of the principals and 42 per cent of the teachers believe a pupil should be promoted if he has already repeated a grade. (8) In general, the reasons given by principals and teachers for failing pupils are associated with inability to meet academic standards. The next most frequent reasons are associated with motivation and attitudes.

SUMMARY AND CONCLUSIONS: (1) The survey indicated that reporting pupil progress to parents is of great concern to administrators and teachers. (2) Marks and marking systems are of long standing. They are so deeply rooted in our school pattern that it is extremely difficult to get teachers, administrators, and parents to see them objectively. The individual conference is supplementing the letter grade report card as the most desired method of communicating the progress of pupils. (3) Importance is placed on enrichment of the curriculum for the gifted rather than acceleration. Neither early admission to first grade or grade skipping is favored. (4) Teachers indicated a cooperative approach to decisions pertaining to promotion. (5) The older the child becomes chronologically, the less chance there is for retention to be profitable. Most respondents indicated nonpromotion was most beneficial in the first three grades. (6) The situation of the low achiever is complex, difficult but hopeful. It defies a simple answer. Early identification and subsequent curriculum change can help the low achieving child to a measure of success in school. These changes must be accomplished by an understanding attitude of the teacher.

THESIS COMMITTEE: Donald G. Pollack, Chairman; Owen A. Hagen

DATE OF COMPLETION: August 1966

ELEMENTARY SCHOOL EDUCATION

AN APPRAISAL OF THE USE OF PROGRAMMED INSTRUCTION FOR HIGH ACHIEVERS IN SIXTH GRADE SOCIAL STUDIES

by Ethel Harberts

PROBLEM: It was the purpose of this writer to review the pertinent literature regarding programmed instruction, to survey programmed materials in social studies for high ability students, to construct and try out a programmed social studies unit with a sixth grade group of high ability students, and to make comparisons of pre-test and post-test scores to determine gains.

PROCEDURE: Over a period of three years, the writer reviewed literature on the psychological basis of programmed instruction, on comparisons between programmed instruction and traditional teaching, on social studies programs available for high ability students in sixth grade social studies, and on methods of constructing a program. A programmed unit on "Early Exploration in Minnesota History" was written. A pre-test was given these students. The teacher-constructed program was then administered to a group of high ability students in the sixth grade of the Willmar Public School. A post-test followed. The results of both tests were tabulated and comparisons noted to determine gains. This was recorded in terms of raw scores, in comparisons with a normal curve, and in the use of a "t" score. The "t" score was used to determine whether the hypothesis that programmed instruction is an effective teaching instrument for high ability students could be accepted or rejected, and to determine the significance of the gains.

FINDINGS: The scores of the pre-test and post-test were recorded together with information on assumptions about learners such as reading level and intelligence quotient. Figures under reading level were those indicated by the Iowa Every Pupil Achievement Test. The I.Q. was determined by the Large-Thomdike Intelligence Test. The average reading ability was 8.4 and the average I.Q. was 132.

The results of the post-test compared with those of the pre-test indicated that every student gained. There were twelve who gained more than fifteen points. In order to determine whether the gain of post-test over pre-test was significant, the mean of the gain was found at 16.3 and the standard deviation 5.39. On a distribution curve we would find 74 per cent between the minus one and plus one standard deviation as compared to 68 per cent on a normal curve. There were 16 per cent between the plus one and plus two standard deviation and 10 per cent between minus one and minus 2 standard deviation. The "t" score was 13.36 per cent which proved to be very significant at the

.01 level and we may accept the hypothesis that programed instruction is an effective teaching instrument for high ability students in sixth grade social studies. The high mean of the gain would also point out that the program was written at an appropriate level for a high ability group and that there was a significant amount of learning.

CONCLUSIONS: The study of programed instruction should develop a greater concern for stating specific objectives and for accomplishing them. Writing one's own program makes one aware of how learning takes place and makes one a more conscientious teacher. Programed instruction is an effective teaching instrument for high ability students who are good readers and whose only motivation needs to be the knowledge that they are making progress through their own initiative, and who can work at their own rate of speed.

Programed instruction is one of many methods to be used, and as an effective method should be given a place in the curriculum of the school especially with high ability students.

THESIS COMMITTEE: D. G. Pollack, Chairman; Owen O. Hagen
DATE OF COMPLETION: August 1966

THE DETERMINATION OF ECONOMIC CONCEPTS IN SOCIAL STUDIES IN THE ELEMENTARY SCHOOL

by James Henry Petersen

PROBLEM: It was the purpose of this study (1) to establish the importance of economic education as it relates to the elementary schools; (2) to determine the basic economic concepts in social studies in the elementary school.

PROCEDURE: The importance of economic education was established by a review of the literature from available sources.

The determination of economic concepts was accomplished by gathering concepts in print. These concepts were tallied with a basic list of concepts constructed by the investigator. Following tallying, the concepts which had been presented ten times were retained. These concepts were listed in a revised outline.

A panel of judges was asked to rank the concepts as presented. The mean for each concept was found and the outline was revised, reflecting their ranking. The judges were also asked to make any additions, deletions, and comments they desired.

FINDINGS: 1. Economic Education had importance in the elementary school because it was necessary for all citizens to gain a basic understanding of the American economy and the schools must reflect the purposes of society and

be committed to an economic education program. It was stated that economic education must start at an early age because it is a part of the first-hand experiences of a child and his family. 2. From the frequency ranking of concepts the following major areas were included in the basic outline of concepts: a. Central Problem in all Societies: Wants, Scarce Resources, The Need for Decision Making, and the Need for an Economic System b. The Modified Market Economy of the United States c. Economic Growth and Stability d. The United States and World Economy e. Other Economic Systems 3. The findings of the judges' ranking revealed the following: a. The major concept areas did not present a clear order for presentation. b. No concept was at one extreme or the other of the ranking. c. There was no concept deleted by all the judges. d. In the rankings of all the major concepts, there was not a mean difference which equaled the possible mean range. 4. The additions, deletions, and comments of the judges were as follows: a. Additions were mainly in the form of rephrasing of concepts or the addition of one or two words to a concept. b. One concept was added: "Demand is determined by wants and purchasing power." c. One judge felt that concepts should be determined by economists only, and another judge felt that all of the concepts were of relative importance.

SUMMARY AND CONCLUSIONS: The study found that economic education was important in the elementary school. It was determined that there were basic economic concepts in social studies in the elementary school. The basic concepts were contained in five major areas.

The judges ranking did not indicate a definite order for presentation. There were some additions and deletions felt necessary by some of the judges.

The conclusions were as follows: (1) Economics education as it relates to the elementary school has meaning. (2) From the frequency listing of concepts, the basic concepts were determined. (3) The judges' ranking did not eliminate any concepts. (4) The ranking by the judges did not significantly change the order of listing. (5) Comments by the judges were confined to a limited number of concepts, indicating general agreement as to the basic concepts.

THESIS COMMITTEE: James W. Anderson, Chairman; Thomas C. Park

DATE OF COMPLETION: August 1967

GUIDANCE AND COUNSELING

AN APPRAISAL OF THE NINTH GRADE OCCUPATIONAL AND EDUCATIONAL PLANNING UNIT ON THE 1959 CLASS OF AITKIN HIGH SCHOOL, AITKIN, MINNESOTA

by William L. Conner

PROBLEM: This study is an appraisal of the Ninth Grade Occupational and Educational Planning Unit on the occupational choices of the 1959 Class of Aitkin High School, Aitkin, Minnesota.

The assumptions used to help in the determination of the problem were as follows: (1) That the above unit helped the student to understand his individual interests and abilities. (2) That the above unit helped the student to become stimulated with concern for his future. (3) That the above unit helped the student to make an occupational choice for his life's work. (4) That the activities of the above unit helped the student understand his interests and abilities, to establish a concern for his future, and to make an occupational choice for his life's work.

METHOD AND PROCEDURE: The procedure used to gather the data was an information blank, commonly referred to as a questionnaire. This class was made up of boys and girls totaling one hundred thirty members from a rural high school centrally located in the state.

The above information blank together with a cover letter and self-addressed stamped envelope was sent to the above class members.

Eighty replies to the initial request were received by the middle of June, 1966, for a total of sixty-two per cent. A second information blank was sent to the remaining fifty students on July 1, 1966 and by August 9, 1966, twenty-nine additional replies had been received. This brought the total replies to one hundred nine out of a possible one hundred thirty for a total of eighty-four per cent.

FINDINGS: The findings established the following: (1) that a total of seventy for a combined sixty-four per cent responded very well or fairly well to the first testable hypothesis; (2) that a total of sixty-five for a combined sixty per cent responded very well or fairly well to the second testable hypothesis; (3) that a total of thirty-seven for a combined thirty per cent responded very well or fairly well to the third testable hypothesis; and (4) that the data in (3) above, lends some further evidence of the ability of more ninth grade students to make curriculum and occupational choices. Further studies may find similar results which could support those vocational writers who recently were found to be more willing to accept this position.

CONCLUSIONS: The following conclusions were: (1) that the unit appeared to serve very well the needs of the subjects of this research to understand their interests and abilities and to establish a concern for their future but failed to help significant numbers to choose their life's work; (2) that the same conclusion was drawn when the relationship of the activities of the unit to the first three testable hypotheses were examined; (3) that girls were generally more satisfied with the help the unit gave them than boys; (4) that seventy-eight per cent of all the subjects were satisfied with their present position and sixty-two per cent agreed with their present job for their life's work; and (5) that if the findings were based on the seventy-seven who actually participated in the unit the helpfulness of the unit becomes more evident.

THESIS COMMITTEE: M.E. Van Nostrand, Chairman; Paul E. Ingwell
DATE OF COMPLETION: August 1968

AN INQUIRY INTO THE INTEGRATION OF THE CHIPPEWA INDIAN STUDENT INTO THE SECONDARY SCHOOLS OF NORTHERN MINNESOTA

by David A. Crockett

PROBLEM: The purpose of this study was (1) to review the literature to determine past conditions and recent trends of Chippewa Indian education in the secondary schools of Northern Minnesota; (2) to study present trends relating to Chippewa Indian education in selected schools with significant numbers of Chippewa Indian students; and (3) to study, compare and analyze the present day policies of the schools toward Chippewa Indian education.

PROCEDURE: A survey was made of the literature on the history of Chippewa education in Minnesota from the fifteenth century to the early nineteen hundreds, and a second survey was made on the more recent literature in the field of Chippewa education.

Questionnaires were mailed to eighteen secondary schools in Northern Minnesota, and returns were received from sixteen of these schools.

Direct contact with teachers at an Indian education workshop for teachers of Chippewa Indian children provided the data that was analyzed in Chapter IV.

FINDINGS: The data collected pertained to trends and present day policies related to the education of Chippewa Indian students.

The returns of this questionnaire indicated that Chippewa Indian students drop out of school at a very rapid rate (55.4 per cent drop out) in comparison to the student body as a whole (20.1 per cent drop out).

Chippewa Indian students also have an average daily attendance rate in the schools surveyed at 85.9 percent as compared to an average daily attendance rate for the entire student body in the schools surveyed of 94.8 percent, or 8.9 per cent less than that of the entire student body.

SUMMARY AND CONCLUSIONS: First, the parents and tribal leaders of the Chippewa Indians in the state of Minnesota must become interested in and actively involved in the educational process if their children are to profit from their education.

Second, the secondary school teachers of Northern Minnesota must be willing to accept new ideas and suggestions and implement them in the classroom if they are going to help these students.

Finally, the school administrators must come up with fresh ideas, different attitudes, and unique approaches to the problem of inadequate and ineffective education for this group.

A cooperative effort on the part of the Chippewa Indians of Northern Minnesota and the educators and personnel of the secondary schools of this area is a necessity if the educational needs of the Chippewa Indians are to be met.

An examination of the curriculum, the methods of teaching, and the attitudes of the teachers should be studied by every secondary school educating Chippewa Indian students.

The fact that the Chippewa Indian students have poor attendance and drop out of school in great numbers is reason enough for all concerned to take a good look for some possible solutions.

THESIS COMMITTEE: M.E. Van Nostrand, Chairman; Paul E. Ingwell

DATE OF COMPLETION: August 1967

THE SCHOOL COUNSELOR AS RESOURCE FOR EMOTIONAL HEALTH

by Florence Hickman Davidson

PROBLEM: "The school counselor is America's first line of defense against mental illness." This statement is found in a final footnote to the federal government's Action for Mental Health. Report of the Joint Commission on Mental Illness and Health. The aim of this thesis is to evaluate the statement, with particular reference to Central Minnesota. A survey of school counselors and clinics in this area provides material for discussion. A second aim is to promote communication among the participants in the survey.

PROCEDURE: A review of the literature shows that the statement is not widely held. Counselors have been ignored by the promoters of community mental health. Arguments of the thesis include that a change in counselor self-conception and in counselor training (such as has begun with year-long

NDEA Institutes) will place counselors in the described position. It is proposed that they may further improve their skills through practicums offered by local, tax supported clinics.

Assessment of the current attitudes of counselors in nine counties of central Minnesota was made through a two page questionnaire sent to 122 secondary schools. A summary of the data obtained was given the seven mental health centers in the area. Five of these replied to further questions covering current and future work with schools and attitudes toward the proposals of the thesis.

FINDINGS: Nearly all counselors in the survey have Master's degrees. Thirty-six of the 101 responding schools have no counselor, the principal responding to the questionnaire.

All clinics generally favored the thesis ideas and desire to increase help to schools. Forty schools described programs of cooperation with local mental health centers. Ninety-four per cent desire more cooperation.

Seventy-one per cent favor group counseling as a means of reaching more students in order to strengthen their self-awareness and mental health. Sixteen objected to these procedures, and 21 persons, 12 of whom were principals, felt that counselor interest in mental health promotion might do more harm than good.

Seventy-six per cent believe that counselors should be more active and interested in emotional health, and 90 per cent desired further studies to understand personality problems and said they would take courses if readily available.

Counselors estimate they now spend an average of 16% of their time on emotional problems as distinct from those of educational and vocational choice. Referral and other data were also obtained, as desired by one of the clinics.

SUMMARY AND CONCLUSIONS: Counselors at present have a modest role conception. Yet the need for personnel to promote self-appreciation or mental health is America's most acute health problem. Ego strengthening is best done early in life. Educators are the only professional group large enough to approximate the scope of the problem. As fellow school people, counselors can influence teachers while themselves obtaining on-the-job practicum from such clinicians as will emphasize health rather than illness. In the survey, most counselors desired more education, and clinics were willing to offer it. Counselor educators, counselor associations, and individual counselors may consider the arguments of the thesis and promote planning.

THESIS COMMITTEE: M.E. Van Nostrand, Chairman; Albert Luker

DATE OF COMPLETION: July 1966

AN EVALUATION STUDY OF THE
COUNSELOR EDUCATION PROGRAM
AT
ST. CLOUD STATE COLLEGE

by Peter Steven Engelmeyer

PROBLEM: It was the purpose of this study (1) to obtain reactions from students having been enrolled in the School Counseling Program at St. Cloud State College as to the effectiveness of the courses, (2) to obtain suggestions for making the courses more effective, and (3) to facilitate possible changes in the program.

PROGRAM: The data for this study were obtained by questionnaires submitted to persons having been enrolled in the School Counseling Program at St. Cloud State College during the time beginning with the fall quarter in 1963 and ending with the second summer session in 1966.

FINDINGS: The survey findings revealed that a majority of the participants in this study approved of the courses and indicated a general satisfaction with the program.

SUMMARY AND CONCLUSIONS: Based on the survey data, the following conclusions may be drawn: (1) Professional concepts and attitudes are important aspects of an effective guidance program. The study seems to provide evidence that the School Counseling Program at St. Cloud State College develops a sense of professional responsibility. (2) The study seems to provide evidence that the School Counseling Program at St. Cloud State College provides adequate preparation for persons entering the field of counseling. (3) The reactions from the participants seem to indicate that more emphasis on the practical aspects of the courses, generally, would be desirable.

THESIS COMMITTEE: Albert H. Krueger, Chairman; David J. Kesar

DATE OF COMPLETION: August 1968.

AN ANALYSIS OF PROCEDURES USED BY MINNESOTA COUNSELORS
IN IDENTIFYING AND WORKING WITH THE POTENTIAL DROPOUT

by Richard J. Fredeen

PROBLEM: This study was an attempt to determine in what capacity counselors in Central and Southern Minnesota are involved with the dropout situation in our public schools. The purpose of this study was to (1) ascertain the

extent to which potential dropout students can be identified; (2) determine the role of the counselor in identifying and working with the potential dropout students; and (3) examine trends in dropout rates during the last five years.

PROCEDURE: A questionnaire was sent to fifty counselors in Central and Southern Minnesota. Information from an equal representation of large and small school counselors was desired. As a result, the sample consisted of two groups of counselors, one group from twenty-five large schools and one group from twenty-five small schools. For the purpose of this study, a large school was defined as a school with a secondary enrollment of one thousand or more students in grades 7-12. Schools with secondary enrollments of less than one thousand students were classified as small schools.

FINDINGS: All fifty questionnaires were completed and returned. The general findings developed by this study were that (1) ninety-six per cent of the surveyed counselors indicated there were characteristics which were identifiable as causes for dropping out of school. Eighty per cent of the counselors stated they did make attempts to identify potential dropout students in their schools; (2) ninety per cent of the respondents indicated it was the counselors role to take the initiative for attempting to identify and work with potential dropout students; (3) dropout rates during the last five years were found to be decreasing in fifty-four per cent of the schools, staying about the same in thirty-two per cent of the schools, and increasing in fourteen per cent.

CONCLUSIONS: The dropout situation is a problem with no apparent clear cut solution and appears to be a phenomenon which will continue to exist in our public schools. However, evidence supports the concept that potential dropout students can be identified in our schools if attempts to do so are made. Some of the more common factors which identify potential school dropouts are (1) low marks; (2) low ability; (3) dislike for subjects; (4) student-teacher conflicts; and (5) dislike for teachers.

There are procedures which do help reduce dropout rates when applied. Some of the helpful procedures are (1) to inquire of the principal and teachers concerning students having difficulties; (2) to check student personal records against dropout factors; (3) to talk with the students; and (4) to initiate talks with parents of students having problems.

THESIS COMMITTEE: Paul E. Ingwell, Chairman

DATE OF COMPLETION: August 1967

A STUDY OF THE ACTIVITY PROGRAM AT SAINT CLOUD TECHNICAL HIGH SCHOOL WITH SPECIAL CONSIDERATION GIVEN TO THOSE STUDENTS NOT PARTICIPATING

by Donald J. Froiland

PROBLEM: The purpose of this research was to determine the number of students who participated in the student activity program at Saint Cloud Technical High School, and to derive reasons why some of the students chose to remain as non-participants.

PROCEDURE: Each student in attendance at Saint Cloud Technical High School during the spring of 1961 was asked to complete a questionnaire which pertained to participation in extra-class activities offered by the school. These questionnaires were then tabulated and the number of students who participated in no activities, one activity, two activities, etc. was found. Each of the activities was next examined and the number of students at each grade level who participated in them was tabulated. Reasons for non-participation that were indicated on the questionnaire were then examined and tabulated. Personal interviews were then conducted with 100 of the non-participating students. These students indicated reasons why they had chosen to remain as non-participants.

FINDINGS: Less than 50 percent of the students in attendance at Saint Cloud Technical High School participated in activities at that school. While no organization had as many as 13 per cent of the students as members, 93 percent of the organizations had less than five percent of the students as active or inactive members. There was a trend for students who participated to become members of more organizations as they neared graduation and the girls participated in activities to a greater degree than did their male counterparts. The major reasons for students not participating in the activities offered by the school were: the lack of transportation home after the activity concluded, the need or desire to work, and the lack of interest in the activities offered by the school. The personal interviews substantiated the answers given on the questionnaire and indicated additional possibilities including: the feeling of inadequacy, mental or social, and the fear of failure. A class or social structure was also felt among the students who did not participate.

SUMMARY AND CONCLUSIONS: The activity program at Saint Cloud Technical High School provided no direct benefits for the over one-half of the students at that school who did not take part in the program. Two of the reasons given by the non-participating students for their lack of participation could be alleviated by including more of the activities into the school day.

It would appear as though a more thorough student orientation to the activity program and further evaluation of the activity program at Saint Cloud Technical High School would be of value.

THESIS COMMITTEE: Frederick C. Markwardt, Jr., Chairman; Paul E. Ingwell
DATE OF COMPLETION: August 1965

THE STIMULUS CONTROL OF BEHAVIOR THROUGH SELF-INSTRUCTION

by Michael Patrick Gimpl

PROBLEM: Much of human behavior seems to originate in verbal instructions, either from the behaving person or someone else. One way of viewing these instructions is as discriminative stimuli for the behavior to which they refer. Other investigations (Ayllon & Azrin, 1964; Fox, 1962; Miller & Gimpl, 1969) have incorporated instructions into procedures to increase the frequency of the instructed behavior. This experiment analyzed five different reinforcement-instruction treatments and their ability to produce increases in study time among college students.

PROCEDURE: Seventy-seven college students in an Introduction to Psychology class, divided into five treatment groups, responded through three one-week trials by recording, and having verified, their study behavior. During week one, all subjects recorded their study time and a baseline figure was computed for each subject and each treatment group. During week two, each subject was given self-instructions on how much time to study each day. The self-instructions were prepared individually for each subject based on performance during week one. During week three, five different treatments using reinforcement and or instructions were applied to the five groups. The data were analyzed by an analysis of variance and Duncan's Multiple Range Test.

FINDINGS: Significant ($p < 0.01$) increases in study time occurred from week one to week two and from week two to week three for all groups. No significant differences existed between treatment group means when the three weeks' performance was taken as a whole. Significant ($p < 0.01$) differences in amount of study between the five treatment groups at the third week were found. These differences favored the treatment involving the reinforcement of study increases in the presence of self-instructions being given. Significantly larger ($p < 0.05$) amounts of study resulted from treatments using a reinforcement procedure than from a nonreinforcement procedure. Any behavior to which a course-point reinforcement contingency was applied increased in frequency during the

experiment. Those same behaviors, when not reinforced, either failed to increase proportionally or decreased in frequency.

SUMMARY AND CONCLUSIONS: Discrimination stimulus control of studying can be effected using a reinforcement contingency for study increases in the presence of relevant self-instruction being given. The frequency of giving self-instructions, and studying, can be increased through reinforcement of either or both behaviors; but no relationship exists to indicate that increases in the giving of self-instructions are automatically followed by increases in study time.

THESIS COMMITTEE: A. William Miller, Chairman; Frank B. Slobetz

DATE OF COMPLETION: June 1969

PREDICTING STUDENT SUCCESS IN NINTH GRADE ALGEBRA IN THE PUBLIC SCHOOLS OF WATERTOWN, MINNESOTA

by Raymond G. Gustafson

PROBLEM: The purpose of this study was to find a reliable method for predicting success in ninth grade algebra. It was hypothesized that achievement in algebra could be predicted by using final eighth grade mathematics marks, scores on the California Algebra Aptitude Test, and the Lorge Thorndike Intelligence test scores as predictors. It was the purpose of this study to determine to what degree prediction could be made.

PROCEDURE: The data in this study included 160 students who had completed elementary algebra during the four-year period from 1961 thru 1965. One hundred and nineteen of these students completed their eighth grade at Watertown Junior High School and the remaining forty-one attended one of several parochial schools whose students enter the Watertown public schools at grade nine.

This study included three predictor variables: (1) the final mark in eighth grade mathematics, (2) the raw score on the California Algebra Aptitude Test, and (3) an intelligence score as measured by the verbal portion of the Lorge-Thorndike Intelligence Test. These predictor variables were combined in several different ways and the students divided into two different groups. One group consisted of those students who had attended grades seven and eight at Watertown and the other group combined students who had attended grades seven and eight at one of several parochial schools. Pearson product-moment coefficients of correlation were computed on the nine specific predictor variables and the final grades in elementary algebra.

Expectancy tables were also constructed to show the relationship between the nine predictor variables and the final marks in elementary algebra.

FINDINGS: (1) All predictors used contribute to the prediction of achievement in algebra. (2) The best single predictor for the whole group is the final mark in eighth grade mathematics. (3) The best single predictor for parochial students only is the California Algebra Aptitude Test. (4) The best combined predictor for parochial students only is the combination of the California Algebra Aptitude Test and the final mark in eighth grade mathematics. (5) The best combined predictor for the whole group is the combination of the California Algebra Aptitude Test score and the final mark in eighth grade mathematics. (6) The least useful predictor for parochial students only is the final mark in eighth grade mathematics. (7) While there is a moderate correlation between intelligence test scores and final marks in elementary algebra, this correlation is not as high as the correlation found between either final eighth grade mathematics marks or algebra aptitude test scores and achievement in algebra.

SUMMARY AND CONCLUSIONS: The prediction of achievement in elementary algebra is possible by using the following variables as predictors: (1) final eighth grade mathematics marks, (2) raw scores on the California Algebra Aptitude Test, and (3) I.Q. as measured by the verbal battery of the Large-Thorndike Intelligence Test. The Pearson product-moment coefficients of correlation between the nine predictor variables and the final grade in elementary algebra range from a high of .6805 where the predictor variable is the sum of the raw score on the California Algebra Aptitude Test and the final grade in eighth grade mathematics for Watertown students only to a low of .4337 where the predictor variable is the final mark in eighth grade mathematics for parochial students only.

When interpreting any of the correlations, one must remember that there is a certain amount of error in measurement. This is especially true for those correlations involving only parochial students where N equals just forty-one students.

Prediction of final elementary algebra grades can be done by using expectancy tables to show any one student his chances of earning a specific grade in algebra based on any one of the nine predictor variables.

THESIS COMMITTEE: Paul E. Ingwell, Chairman; James A. Grunerud

DATE OF COMPLETION: June 1967

AN INVESTIGATION OF THE AUDIO-LINGUAL AND TRADITIONAL METHODS IN THE TEACHING OF MODERN FOREIGN LANGUAGES

by Urban James Kraemer

PROBLEM: The purpose of this project was to examine the reactions of foreign language teachers as to the value of the audio-lingual method and the

traditional grammar-translation method of modern foreign language instruction, on both the elementary and secondary levels.

PROCEDURE: The study is based upon a review of literature which includes a presentation of the development of current methodology in language instruction, factors involved in the pre-reading period, and the effect of grammar study.

The primary means of gathering evaluative data for the study was a questionnaire. Personal interviews were held with a separate small group of foreign language teachers. The purpose of the interview was to provide direct personal contact with foreign language teachers in examining existing attitudes of modern foreign language methodology.

The total number of responses to the questionnaire was one-hundred and three which represented 79 per cent of the sample group.

FINDINGS: General findings which emerged from the study: (1) Total use of the traditional grammar-translation method prevents the student from acquiring a real understanding of the foreign language. (2) The audio-lingual method is the best approach for practice in listening comprehension and speaking. (3) The pre-reading period does help the student improve his aural-oral ability and results in more ease in the reading phase. (4) The pre-reading period can be varied and adapted to particular situations and circumstances. (5) There is a necessity for the explanation of grammar in order to broaden the student's understanding of the foreign language structure. (6) More thorough grammar study should be made after the dialogue and pattern drills have been learned or during the advanced levels of the instructional program. (7) An eclectic approach or a combination of the traditional grammar-translation method and the audio-lingual method seemed to be favored.

SUMMARY AND CONCLUSIONS: Factors such as type of instructor, type of foreign language program, grade level, age level, level of aptitude, and the particular language which is being studied call for a varying length of the pre-reading period. Foreign language teachers did not prescribe a rigid schedule as to allocation of time and activity. The audio-lingual method and the traditional grammar-translation method can supplement each other.

The audio-lingual approach is a logical beginning to language study. Well-used and supplemented, it provides us with an adequate foundation for further language learning.

Modification of a total audio-lingual approach will have to be made. A complete turning away from the traditional method, itself not wholly satisfactory, to the audio-lingual method has not proven totally satisfactory.

THESIS COMMITTEE: Paul E. Ingwell, Chairman; A. Wilbur Brewer

DATE OF COMPLETION: July 1968

A STUDY OF GUIDANCE MATERIALS DEVELOPED AND USED BY COUNSELORS IN SELECTED MINNESOTA SCHOOLS

by Delores M. Krause

PROBLEM: It was the purpose of this study (1) to gather from selected Minnesota public secondary schools forms relating to the various phases of a guidance program; (2) to analyze these forms as to common elements and strengths and weaknesses; and (3) to present examples of some types of the forms. The study was limited by two factors: (1) the schools did not submit examples of every form they had developed and (2) difficulties were encountered in categorizing and rating the forms that were submitted.

PROCEDURE: Twenty-seven schools with enrollments of under 1,000 in grades seven through twelve and who employed at least one full-time counselor were requested to submit copies of all original materials used in their programs. One hundred per cent of the schools responded. Two schools that later did not meet the selection criteria were dropped from the study.

The materials gathered were screened for originality and the original forms were placed into categories according to their function.

Criteria for judging the forms were gathered from published materials and from college personnel in the fields of counselor education and business. These criteria and the forms were given to a three member rating committee which rated each form on a five point scale. Only those forms which received ratings of four or five were used in the study.

FINDINGS: The schools surveyed submitted a wide variety of materials. Twenty-six per cent of these materials received above average ratings with the above average ratings for individual areas ranging from 45% (registration) to none (testing). It would appear that the more frequently a type of form is used, the better its design.

SUMMARY AND CONCLUSIONS: The major portion of the literature available regarding the designing of forms deals with cumulative records but only eight percent of the schools surveyed submitted cumulative records designed by the school.

The amount of guidance information being gathered and disseminated in the selected schools is overwhelming if the number and variety of forms submitted is used as an indication of quantity. It also seemed that schools do the best job of designing forms that are used more frequently. The study did not support the premise that the number of forms used and submitted by a school would increase proportionately with the student-counselor ratio.

The study led to the following conclusions: (1) there is a need for standardization of terms regarding forms in guidance literature; (2) schools could

well consider setting up duplicate filing systems because of the nature of the information frequently gathered about students; and (3) the counselor in the small school needs help in the construction of transient forms as well as cumulative records.

THESIS COMMITTEE: Albert H. Krueger, Chairman; Paul E. Ingwell

DATE OF COMPLETION: June 1966

A COMPARISON OF INDIAN DROPOUT AND INDIAN GRADUATING STUDENTS AT THE MILLE LACS INDIAN RESERVATION

by Luddy Roy Martinson

PROBLEM: It was the purpose of this study to identify factors within the individual, the home, and the community that were related to the dropout rate among Indian students on the Mille Lacs Indian Reservation. To focus on the purpose of this study, the following questions guided the analysis: (1) Is there a difference between Indian high school graduates and Indian high school dropouts in the scholastic achievements, attendance, and classroom behavior, in grades one through eight? (2) Is there an association between cultural traits that are characteristic of the majority of families in the United States and in terms of graduation from high school, school success of Indian children living on the Mille Lacs Indian Reservation?

PROCEDURE: The data for this study were secured from information on file at the Mille Lacs County Superintendent of Schools office and from a questionnaire designed to gather information from the parents of eighty-two students who were enrolled in the Vineland Elementary School during the 1951-1953 school years.

The questionnaire was constructed in the attempt to find which of the families were characterized by the following cultural traits: (1) habitual use of spoken and written English in the home as a means of communication. (2) the presence of books, magazines, and radio in the home. (3) regular, useful, and gainful employment of the breadwinner of the family. (4) children of the family looking toward adulthood with expectations of desirable employment opportunity. (5) participation of adult members of the family in civic and community affairs. (6) family pressure and encouragement for continued education.

FINDINGS: There was no difference between the high school graduates and dropouts in elementary school classroom behavior. There was a difference between groups in achievement and attendance; the graduates had higher achievement and attended school more often than the dropouts.

In the analysis of family characteristics of the families studied, it was found that parents of graduates had a higher degree of: (1) participation in civic and community affairs, (2) pressure and encouragement for continued education.

It was also found that there was no difference between groups with respect to the following traits: (1) expectation of children that they will obtain desirable employment, (2) regular employment of the breadwinner of the family, (3) presence of books, magazines and radio in the home, (4) habitual use of spoken and written English in the home.

SUMMARY AND CONCLUSIONS: There was a difference in the elementary school attendance of dropouts when compared to high school graduates. This difference appears early and might be a warning of future dropout.

There was a significant difference between the two groups, in degree of parent participation in civic and community affairs, and in degree of parental encouragement for children to continue their education.

Greater Indian parent involvement in school activities should be encouraged. The possibility of Indians as school resource people should be investigated.

This study and other studies of the high rate of dropouts among Indian students in Minnesota Indian reservations might be of more value if they were consolidated and compared.

THESIS COMMITTEE: Frederick C. Markwardt, Jr., Chairman; Frank B. Slobetz
DATE OF COMPLETION: September 1965

ANALYSIS OF SYSTEMS LEARNING: EFFECTS OF INTERPOLATED ACTIVITY ON RETENTION OF SYSTEMATICALLY RELATED VERBAL RESPONSES

by Russel N. McCrimmon

PROBLEM: Investigation of Miniature Linguistic Systems (MLS) was originated by Esper (1925) and extended by Foss (1968). The Foss MLS systematically matches 16 two-syllable nonsense words with colored shapes: first syllable matches color; second, shape. Findings are that if Ss learn as few as eight MLS items, they can produce all 16, and that systematically facilitates learning. This experiment explores effects of interpolated activity upon retention of MLS items.

PROCEDURE: Eighty one introductory psychology students were assigned to two control, and four experimental groups. Ss were read instructions for learning materials: five plastic-covered paper sheets with eight or 16 colored shapes across the top and 16 NS words along the left margin. Each shape had

a column of black squares beneath it. Ss selected words by erasing squares, revealing "c"s for correct words. Ss had five sheets to reach criterion; one errorless sheet. A-groups learned eight items, B-groups, 16. After criterion, control groups completed a 16-item test. Groups 1-A, 1-B, 2-A, and 2-B were given five interpolated activity sheets, like eight-item learning except (unknown to Ss) "c"s were omitted. Interpolated items for 1-A and 1-B had been directly learned, 2-A and 2-B received new items. Ss were limited to one response per item. After interpolated activity, experimental Ss took the 16-item test. A general questionnaire was the final task for all Ss.

FINDINGS: Seventy-two of 81 Ss reached criterion, 12 per group. Control groups, with eight and 16-item learning, made similar test scores, confirming the hypothesis that systems learning would occur. Hypothesized increases in test errors due to interpolated activity and eight-item learning did not occur. A predicted correlation between test and interpolated activity errors was not found. Significantly greater test errors were found only in 2-A scores on new items (items not directly learned). Questionnaire responses indicated awareness of system, mixed cognitive and affective reactions to interpolated activity, and some learning from test sheet.

SUMMARY AND CONCLUSIONS: This experiment investigated the effects of interpolated activity upon retention of systematic material. Evidence was found that systematic extensions are more vulnerable to interfering effects of interpolated activity than directly learned material. Discussion involved possible applications of operant extinction, hypothesis testing, and retroactive interference theories. Methodological problems and directions for further research were also discussed.

THESIS COMMITTEE: Bill Miller, Chairman; Frank B. Slobetz

DATE OF COMPLETION: June 1969

**A FOLLOW-UP STUDY:
1962 GUIDANCE AND COUNSELING INSTITUTE
ST. CLOUD STATE COLLEGE, ST. CLOUD, MINNESOTA**

by Russel Glenn Moe

PROBLEM: It was the purpose of this study to: (1) secure evaluations from the Institute enrollees regarding the effectiveness of the Institute, (2) obtain their opinions about change in attitude or technique due to the Institute, and (3) try to summarize these responses into material that would be useful for the author of this study and other people interested in the St. Cloud State College Guidance and Counseling Institute.

PROCEDURE: A survey had been conducted while the Institute was in session by another enrollee. Results of this survey were used to help formulate questions to be asked of the same Institute enrollees after they had completed the session and had been actively counseling for about one school year. The follow-up questions concerned change in attitude or technique that occurred due to the Institute.

In each area of class work, or activity, the enrollee was asked to make a rating of "excellent," "good," "fair," or "poor." He was also encouraged to write a comment concerning application of this activity. Questionnaires were sent to the twenty-six enrollees but only twenty-two responded.

FINDINGS: (1) Respondents consistently rated the activities in the two upper rating categories, but individual comments were needed to specify how the new technique or attitude had been applied. (2) Concerning the two classroom situations, 75 per cent of the ratings were in the two top classifications. (3) Concerning the guest consultants Dr. Rothney, Dr. Mowrer, and Dr. Lohmann, 80 per cent of the ratings were in the upper categories. (4) 100 per cent of the respondents placed the Career Day in the upper ratings. (5) 86 per cent placed Related Counseling Activities, involving role playing, in the two top ratings. (6) 77 per cent felt they had used material gained from their individual research and term paper. (7) Comments regarding "most valuable experiences" centered around role playing sessions, small groups, exchange of ideas, the class in "Personality Theories," and observing the Practicum. (8) Comments concerning criticism centered around not having a Practicum, coursework too elementary, repeat material, too much paper work, not applicable to junior high counseling, and interesting but not practical sessions.

SUMMARY AND CONCLUSIONS: It was determined that a majority of the classes and procedures in the Institute had a favorable effect on the enrollees. Combining the results of the first nine questions produced a total of 41 per cent "excellent" ratings and 82 per cent of the ratings in the two top categories. The respondents added comments regarding individual ways in which they had applied this in their situation.

To produce a more effective Institute in the future, the following items could be considered: (1) select enrollees with a more similar background of coursework, (2) select enrollees with more similar counseling positions, (3) select classes or curriculum which will more approximately meet the needs of the enrollees, (4) provide actual counseling experience with high school students, (5) provide activities or projects where enrollees can participate, and (6) require less writing of formal reports on individual research and provide more opportunity to share the knowledge gained from this research.

THESIS COMMITTEE: Albert Luker, Chairman; Frederick C. Markwardt, Jr.
DATE OF COMPLETION: February 1964

A STUDY OF THE PUBLIC SECONDARY SCHOOL COUNSELOR SUPPLY AND DEMAND IN THE STATE OF MINNESOTA

by Herbert Edward Murphy

PROBLEM: It was the purpose of this study (1) to gain an understanding of the major factors that affect counselor supply and demand; (2) to gather and present evidence of the demand for public secondary school counselors; and (3) to present evidence of the supply of public secondary school counselors.

PROCEDURES: An attempt was made in the study to consider as many facets of supply and demand of Minnesota public secondary school counselors as possible. This was accomplished through studying counselor certification records at the Minnesota Department of Education, interviews, letters, and questionnaires. The questionnaires were developed under the guidance of Reynold Erickson, Minnesota Supervisor of Guidance Services, after considering what information would be needed for the study.

FINDINGS: The evidence available for this study indicates that there is a present and a projected demand for secondary school counselors in Minnesota. Research indicated that by 1970, there will be a total minimum demand for 300 secondary counselors. This conservative number will most likely be doubled by 1970, however, since more school personnel services are being offered, counselor-student ratios are decreasing, and pupil enrollment is increasing.

The supply of certified counselors in Minnesota has improved considerably since 1957-58; not at any time, however, has the supply been equal to the demand. Research indicated that from 1960-61 to 1965-66, the counselor supply in Minnesota increased at an average of forty-one counselors per year. If this average continues, a total of 123 counselors will be added to the present supply by 1970. This will leave a shortage of 177 counselors in Minnesota. The eight Minnesota counselor training institutions have recently indicated that there are available facilities for a greater number of counselor trainees. The problem of an insufficient supply of counselors in Minnesota appears to be partially due to the lack of interested, personally and academically qualified persons. It was indicated in one study that a considerable number of teachers have a negative attitude towards counseling because of some unsatisfactory experience with a counselor.

SUMMARY AND CONCLUSIONS: Since counselor supply and demand is a limitless subject for research, no attempt was made to study thoroughly any one factor related to the problem.

The study indicated that the demand for public secondary school counselors has been increasing steadily for the past ten years. The information available indicated that a definite shortage of counselors exists in Minnesota. With the expansion of many Minnesota educational, governmental, and industrial programs and the need for trained counselors within these programs, the demand for counselors in the future will increase. Unless more counselors are trained and enter public school counseling within the next few years, the Minnesota counselor supply will be inadequate to meet the needs of the high school population.

THESIS COMMITTEE: Albert Luker, Chairman; Paul E. Ingwell

DATE OF COMPLETION: August 1967

PREDICTING SEVENTH GRADE SCHOOL ACHIEVEMENT USING HSPQ PERSONALITY DIMENSIONS, IQ AND TEACHER GRADES

by Gene W. Nelson

PROBLEM: An investigation of academic achievement of an entire sixth grade population in the Benson Public Schools was made and the results were used to develop a seventh grade academic prediction equation. This prediction equation will not be tested empirically in this study; it will, however, be tested in subsequent years in the Benson Public Schools.

PROCEDURE: A linear multiple prediction procedure was followed throughout to develop a seventh grade achievement prediction equation. The criterion variable was the composite achievement score of the Metropolitan Achievement Test Battery. The predictor variables were intelligence, teacher grades and the fourteen personality dimensions as measured by the High School Personality Questionnaire.

Multiple correlations and multiple regression equations for each sex and for both combined were calculated on an electronic computer using the UMSTAT 50 Program from the University of Minnesota Library. Means, standard deviations, and intercorrelations on all seventeen variables by sex and on the total sample were also computed.

Only the beta weights which contributed significantly at the .05 level of confidence to the variance in the criterion measure were retained.

FINDINGS: The multiple correlation for the sexes combined was .758; for boys, .797; and for girls, .794. This indicates there is a significant relationship between achievement and a weighted combination of the sixteen predictors. Of the sixteen predictor variables, only four made significant contributions to prediction at the .05 level of confidence. They were Intelligence (.64), Emotional Stability (.35), Sensitivity (-.22) and Teacher Grades (.48) (or

the combined sexes since no significant differences were found between sexes. Teacher grades were excluded as a predictor because of its high correlation with intelligence.

The multiple correlations derived for the three remaining variables are .72 for sexes combined; .75 for boys and .71 for the girls. There was no significant difference between the multiple R obtained for all sixteen variables from the multiple R based on the three predictor variables. Therefore, the prediction equation using the three predictor variables was selected for presentation in this study. The equation presented for the sexes combined is: 7th Grade Predicted Achievement = .0910 (Intelligence) + .1648 (Emotional Stability) - .0552 (Sensitivity) - 4.836.

CONCLUSIONS: The multivariate prediction equation developed in this study using intelligence, emotional stability, and sensitivity accounts for 51.84 per cent of the variance in academic achievement as measured by the Metropolitan Achievement Test Battery. This is approximately 10 per cent better than the best single variate predictor demonstrated and no significant differences were found to exist between the sexes.

To date, it appears that the achievement prediction equation developed will more accurately identify the low achiever than other prediction techniques available at Benson, Minnesota.

THESIS COMMITTEE: Paul E. Ingwell, Chairman
DATE OF COMPLETION: July 1966

JOB OPPORTUNITIES FOR HIGH SCHOOL GRADUATES IN A RURAL COUNTY IN CENTRAL MINNESOTA

by John G. Nemanich

PROBLEM: In a 1964 study conducted under the auspices of the Todd County Extension Committee one of the goals set by this committee was to provide job opportunities for youth, within the county, so that it will not be necessary for youth to leave the county in search of employment. This study attempts to find out what job opportunities there are for high school graduates within this rural county in Central Minnesota.

PROCEDURE: This study is limited to job opportunities in the seven communities within the county that comprise the seven high school areas of the county. The data were gathered by means of an interview with one hundred and ninety-six employers in the county. For ease and uniformity in tabulating, the following questions were asked of each employer. (1) How many high school graduates have you hired for permanent employment in the past five years? Male? Female? (2) How many high school students have you hired

for part-time work in the past five years? Male? Female? (3) Did any of the students who worked for you part-time become full-time employees upon graduation? Male? Female? (4) Have you hired any high school dropouts in the past five years? Male? Female? The five year period in question is 1960-1965. Excluded from the survey were all establishments which sold alcoholic beverages since it is illegal for high school students to work in such places. Also excluded were those establishments where it was known that during the past five years no high school students had worked there part-time while in school and no high school graduates had been hired for full-time employment.

FINDINGS: The 1960 census gives the population of the seven communities in the county with high schools as 7978. The two larger communities have a combined population of 5120 almost equally divided. The other five communities have a combined population of 2858 ranging from 744 to 372. There were 1915 high school graduates in the county from 1960-1965, 960 males and 955 females.

About 30 per cent of the males (284) and 16 per cent of the females (155) were successful in finding part-time employment while in high school. Baby sitting was not counted in this survey. Nine males and fifteen females who had worked part-time while students became full-time employees upon graduation. A total of eighty-four males and sixty-eight females became full-time employees in the county upon graduation. This includes those who had been part-time employees prior to graduation.

During this same five year period 122 students were dropouts. Sixty-three males and fifty-nine females did not complete their high school education. Twenty-three males and eleven females from this group were able to find full-time employment in the county.

The jobs of the male dropouts did not vary too greatly from those of the graduates. They fell into the unskilled or semi-skilled class. They found employment in garages, gas stations, construction, grocery store, creamery, and lumber yard. The female dropouts were hired as waitresses.

SUMMARY AND CONCLUSIONS: The communities in the county are small. Since there is not a concentration of large industry in the county, the demand for labor is not too great. High school graduates in the county leave for the larger cities where they can find a greater variety of jobs with better pay. The county can offer only unskilled or semi-skilled employment and this is very limited.

As long as the rural communities do not grow, so long there will be an over supply in the labor force especially among the youth. The answer is to invite industry into the county and make the climate such both in regard to supply of labor and housing and fair tax rates so that the investment will pay off. The youth may then remain in the county.

THESIS COMMITTEE: M.E. Van Nostrand, Chairman; James A. Grunerud

DATE OF COMPLETION: October 1966

A STUDY TO DETERMINE THE EFFECTIVENESS OF GROUP COUNSELING WHEN USED WITH UNDERACHIEVING TENTH GRADE STUDENTS

by Richard Joseph Perrizo

PROBLEM: The study was designed to investigate the effect of group counseling on the grade point average underachieving students' academic achievement and/or social behavior.

PROCEDURE: Three groups were utilized in this study. These were a counseled group, a study group, and a control group. The counseled group was initiated to determine the effect of group counseling on underachieving student achievement and/or social behavior. The study group was instituted to estimate the effect of mere group participation on a student's academic achievement and/or social effectiveness, and the control group was included to compare the results obtained by the group participants with the results received by nonparticipating underachieving students.

Tenth grade students were chosen to participate in the research project whose grade point average T scores were at least 9.0 points lower than their Lorge Thorndike Verbal Intelligence Test T scores. The students were questioned concerning their willingness to participate in the study and, from the group of assenting students, seven were chosen for each of the three groups. The counseled and the study group then each met in group sessions one hour a week for 14 weeks.

The effect of group participation on academic attainment was tested by comparing the underachieving students' first semester school grades with their second semester, end-of-study grades. This was accomplished by the use of a 't' test of mean difference. Change in social behavior was determined by a test-retest evaluation of Minnesota Counseling Inventory scores and by a comparison of staff evaluations of student personality traits obtained both prior to and at the conclusion of the study. Change in Minnesota Counseling Inventory pre-/post-study scores were evaluated by a 't' test of mean difference. Significant change in staff evaluations was determined by the use of a median test.

FINDINGS: At the conclusion of the study it was found that (1) no significant change in scholastic attainment had taken place in any of the three groups, (2) the counseled group "emotional stability" and "leadership" Minnesota Counseling Inventory scores had worsened significantly and the control group "emotional stability" and "mood" Minnesota Counseling Inventory scores had improved significantly, and (3) the study group "leadership" staff evaluation, the only evaluation which changed significantly, registered an improvement.

SUMMARY AND CONCLUSIONS: It was concluded that the lack of a positive change in the group counseled students' grades or social behavior had possibly been caused by (1) the inexperience of the counselor in dealing with group counseling situations, (2) too few group counseling sessions, (3) the obvious emphasis given to verbal group participation, or (4) the personal characteristics of the underachieving group participants.

No reason could be given for the improvement in control group Minnesota Counseling Inventory scores.

The significant change in study group "leadership" staff evaluation, it was decided, could have come about by chance. If one accepts the validity of the results, however, we must assume that the study group participants have, for no apparent reason, developed a more positive role in their dealings with other people; that they are possibly more inclined to take a leadership role now than at the outset of the study.

THESIS COMMITTEE: Frederick C. Markwardt, Jr., Chairman; M.E. Van Nostrand

DATE OF COMPLETION: February 1966

A SURVEY OF DROPOUTS FROM THE ST. CLOUD SECONDARY SCHOOLS

by Charles A. Peterka

PROBLEM: The purpose of the study was to survey the literature and analyze the data provided by five case studies of dropouts from the St. Cloud secondary schools. The findings were used to draw conclusions and to make recommendations regarding causes for dropouts, preventing dropouts, and ways of assisting dropouts.

PROCEDURE: An attempt was made to contact all of the students who left the St. Cloud secondary schools during the 1967-1968 school year. About thirty dropouts responded by coming to the office for more information and an interview. After three or four counseling sessions a sample of five names was selected for the case studies.

The data for the case studies were derived from several personal interviews with the students and their parents. The cumulative files used by the schools provided information as did conferences with teachers, counselors, and principals. In cases where the student was involved, information from personnel in the welfare office, county probation office, employment office, and mental health center was also used.

FINDINGS: A dropout from the St. Cloud secondary schools was identified as follows: (1) a student of low scholastic ability, especially low reading ability, (2) one who did not participate in extracurricular activities, (3) one who was unhappy with the teaching methods and the school curriculum, (4) a student who had problems of personal adjustment, and (5) one from a broken and permissive home.

The methods used by the St. Cloud secondary schools to prevent the students from dropping out were: (1) to hold parent, student, and teacher conferences, (2) to increase counselor-student relations, (3) to utilize the home-school liaison and school social workers, (4) to increase the variety of course offerings, and provide special programs for the handicapped, (5) to provide remedial mathematics and reading classes, and (6) to provide classes for pregnant girls.

The methods used by the St. Cloud secondary schools to help the dropout were: (1) the evening school program, (2) the youth employment counselor, (3) the area vocational school, and (4) the inter-agency committee.

SUMMARY AND CONCLUSIONS: A dropout from the St. Cloud area was usually a boy about seventeen years old with personal adjustment problems. He had sufficient intelligence to complete high school, but had been handicapped by low reading ability. In most cases he had failed courses, had difficulties in school regarding smoking and truancy, and had trouble with the law. He did not participate in extracurricular activities and was unhappy with the school situation. He often came from a broken and permissive home.

Many efforts were made by the St. Cloud schools to prevent his leaving. Home visits by school social workers and home-school liaison workers were made. There were changes in classes and curriculum to suit his needs. He was identified as a student with problems and an effort was made to provide intensive counseling.

After he had dropped, he and his parents were contacted and had the opportunity to profit from counseling services. If he was interested, he had the opportunity to enroll in an evening school program.

THESIS COMMITTEE: Paul E. Ingwell, Chairman; James A. Grunerud

DATE OF COMPLETION: August 1968

A FOLLOW-UP STUDY OF VOCATIONAL AGRICULTURE STUDENTS OF DASSELL HIGH SCHOOL GRADUATING IN THE YEARS 1954 TO 1963 INCLUSIVE

by Frank Curtis Peterson

PROBLEM: It was the purpose of this study to determine (1) why students enrolled in vocational agriculture courses, (2) the number of graduates of Dassel High School that are engaged in agriculture or related occupations, (3) if courses other than agriculture would have been more profitable to the students in their present occupations, (4) what the prospects for agriculture in the Dassel area appear to be, and (5) what the prospects for the vocational agriculture department in the Dassel High School appear to be.

PROCEDURE: A three-fold approach was made to the gathering of data: (1) The literature was reviewed for perspective. (2) A questionnaire was prepared and sent to the male members of the ten classes included in the study for objective and subjective responses. (3) Interviews were conducted with the local banker, co-owners of a farm implement firm, the manager of the Co-op Feed Mill, the county agent, the vo-ag teacher, and the high school principal in an attempt to evaluate local trends. The data so gathered was tabulated when possible, analyzed, and evaluated.

FINDINGS: (One hundred thirty-three usable responses were received.) (1) Fifty-five took vo-ag for one year only. Forty-nine (89.1 per cent) of these stated that they did so because it was required. (2) Eighty-eight (66.2 per cent) lived on farms. (3) The first year after high school fifty-nine (44.6 per cent) attended school, twenty-four (18.5 per cent) worked at home, forty-nine (36.9 per cent) worked elsewhere. Nineteen of the last group worked on farms or farm-related jobs. (4) One hundred thirteen stated that vo-ag had not helped in their choice of present occupation. (5) Sixty-eight (51.1 per cent) said they would take vo-ag in high school again. (6) Ninety-four (70.7 per cent) felt that shop or industrial arts would have been more valuable to them than vo-ag. (7) Sixty-six (49.6 per cent) felt that vo-ag would have been more valuable if principles had been stressed more and mechanics of farming less. (8) Ninety-six (72.2 per cent) were in favor of a complete change in the vo-ag program. (9) Those personally interviewed concurred as to the trend toward fewer but larger farms, more specialization in farming, and a general feeling that farmers are not encouraging their sons to continue in farming.

SUMMARY AND CONCLUSIONS: The study suggests that vo-ag should be an elective rather than a required subject.

The study indicates that less than one-third (32.9 per cent) of the boys who enroll in vo-ag complete four years of it. Only eighteen graduates (13.5 per cent) were engaged in farming. An additional thirteen (9.8 per cent) were engaged in farm-related occupations. This totals less than one-fourth (23.3 per cent) of the graduates being engaged in some phase of agriculture.

The study seems to indicate that courses in industrial arts would have been more profitable to most of the students and that a revision of the vo-ag program to enlarge its scope would be desirable.

The study suggests that the prospects for agriculture in the area appear to be good but that interest and enrollment in the vo-ag classes at Dassel High School appears to be declining.

THESIS COMMITTEE: M.E. Van Nostrand, Chairman; Eugene Perkins

DATE OF COMPLETION: June 1966

A PROPOSED PROGRAM OF GUIDANCE SERVICES FOR HOMEBOUND STUDENTS AT THE SECONDARY SCHOOL LEVEL

by Janet Marlene Ryan

PROBLEM: The chief purpose of this project was to develop a program of guidance services for homebound students at the secondary school level.

PROCEDURE: The initial part of the study involved a review of the literature germane to the project. Included in this review was an examination of the feasibility of using federal funds for the development of a guidance program for the homebound. The second part consisted of securing information about the status and needs of such a program by means of questionnaires submitted to sixty-six selected school principals in Minnesota, and thirty parents and thirty homebound students in the St. Cloud area. A program was developed on the basis of this background.

SUMMARY: 1. The review of literature revealed a real need for guidance for students who were on homebound status, as no formal guidance programs for the homebound students had been organized or developed.

2. The survey of school principals disclosed that about one-half of the schools did not provide guidance services for their homebound students on a regular basis, and that over one-half of the principals felt there should be a guidance program for the homebound. Nearly ninety per cent of the principals reported that their school districts were not large enough to justify an additional counselor specifically for the homebound, even though funds might be available. The five per cent who indicated that they would hire a counselor exclusively for the homebound student represented the larger school districts.

Seven per cent of the principals indicated that they would hire a counselor for the homebound using local funds.

3. About two-thirds of the parents polled indicated they favored guidance services for their homebound children. Over one-third of them felt that present guidance services were not adequate.

4. Nearly three-fourths of the homebound students expressed a need for guidance services and about one-half felt that the present services were not adequate.

CONCLUSIONS: In the light of prevailing literature and of the survey findings, it seems clear that guidance services for homebound students are not generally provided and, when provided, such services are generally not adequate. It seems clear also that there is a genuine need for adequate guidance services for these students.

Accordingly, a model guidance program for homebound students was developed to serve as a guide for those interested in providing appropriate guidance services for such students.

THESIS COMMITTEE: Frank B. Slobetz, Chairman; Albert H. Krueger

DATE OF COMPLETION: December 1966

A STUDY OF SOME RELATIONSHIPS BETWEEN THE DIFFERENTIAL APTITUDE TEST SCORES AND COURSE MARKS OF STUDENTS IN THE ELK RIVER PUBLIC SCHOOLS

by Douglas James Stillwell

PURPOSE: The purpose of this study was (1) to determine the relationship between test scores from the DAT and course marks in elective subjects in the Elk River Public Schools; (2) to consider the importance of the DAT in the selection of vocations and in the formation of educational plans; and (3) to present the results of interviews with former students of the Elk River Public Schools who were questioned concerning the DAT.

PROCEDURE: Literature concerning the predictive value of the DAT in determining academic success and the use of these tests in predicting vocational selection was reviewed. A statistical comparison of course marks and DAT scores of students of the Elk River Public Schools was made from data found in the cumulative record files. Former students of the Elk River Public Schools who had taken the DAT in grade nine were interviewed and asked to consider their impressions of the tests and uses made of the results.

FINDINGS: Strong positive relationships were found to exist between the verbal reasoning section of the DAT and course marks of students from the Elk River Public Schools in Biology I and Spanish. Numerical ability, as tested by the DAT, appears to be related to success in Algebra I and Plane Geometry in this school system. However, a more accurate predictor of future course marks in mathematical as well as other kinds of subjects is the combined test scores of the verbal and numerical tests. Not all combinations of test scores and course marks yielded coefficients of correlation high enough to be considered significant.

Few of the students interviewed remembered taking the DAT in grade nine. Most of these former students felt that the results of the DAT were not of great influence on their vocational choices or educational plans, but indicated that an interpretation of the tests in the eleventh or twelfth grade would have been an aid in later educational-vocational planning.

SUMMARY AND CONCLUSIONS: The DAT appears to be a useful instrument in the measurement of academic potential. All of the studies cited indicate a positive relationship between some or all of the DAT and success in most subject areas. From the results of the statistical study relating course marks and DAT scores of Elk River students and the consideration of the data collected through interviews, it can be concluded that there is, in most instances, a positive relationship between these sets of measurements.

THESIS COMMITTEE: M.E. Van Nostrand, Chairman; Paul E. Ingwell

DATE OF COMPLETION: July 1965

A SURVEY OF THE SUMMER GUIDANCE PROGRAMS IN MINNESOTA PUBLIC SCHOOLS

by Lydell Edgar Taylor

PROBLEM: The purpose of this study was to investigate: (1) the extent of summer guidance programs in Minnesota public secondary schools; and (2) the counselors' functions in summer guidance programs, recipients of these duties and services and ranking of the time required to perform selected functions.

PROCEDURE: Questionnaires were mailed to each of the 122 public secondary schools that employed one or more full-time counselors during the 1961-1962 school year. Completed returns were received from 119 (97 per cent) of the secondary schools.

FINDINGS: Some of the findings as indicated by the survey are as follows: (1) Summer guidance programs were conducted in seventy-eight (66 per cent) of the public secondary schools surveyed. This number consists of sixteen per cent of all the Minnesota secondary public schools. (2) These schools employed 263 counselors for an average summer employment of approximately three weeks per counselor. There were 143,000 secondary school students enrolled in the schools with summer guidance programs. (3) Counseling services were performed by ninety-four per cent of these schools. The clients counseled in these schools were classified as the same types of clients as seen during the regular school year. Counseling was not the most time consuming activity for the counselors. (4) The counselors' reasons for seeing clients during the summer were educational, vocational and personal in nature. Registration was the most frequent reason for counselor contact with students. This activity required more of the counselors' time to perform than any other counseling activity. (5) Counselors in twenty-five per cent of the schools administered tests during their summer employment. (6) Less than twenty per cent of the schools reported that counselors were responsible for organizing summer classes, in-service training, employment and placement, or conducting summer classes. (7) Records and reports were reported by seventy-five per cent of the schools and up-dating the occupational file was reported by sixty-one per cent of the schools. These activities demanded a large part of the counselors' summer time. (8) The grouping of classes was reported by fifty-seven per cent of the schools and research studies were reported by fifty-three per cent. (9) Scheduling and re-assigning classes were reported by forty-four per cent of the schools. This function took the major share of the counselors' time for those who performed these functions. (10) Home visitations, writing bulletins and handbooks were minor summer functions.

CONCLUSIONS: (1) There is no single generally accepted summer guidance program in the high schools of Minnesota. The services offered, as well as the relative emphasis upon them, vary markedly from school to school. (2) The data indicated many counselors were employed to perform only one or two specific duties during the summer. (3) Guidance services tended to be extended during the summer. (4) Guidance services were utilized by parents and the community as well as students during the summer. (5) In general a nearly identical agreement exists between the duties and services performed during the summer and those performed by counselors during the regular year. (6) A great amount of the counselors' summer employment time was utilized in performing clerical duties.

THESIS COMMITTEE: Frederick C. Markwardt, Jr., Chairman; Vernon Mork
DATE OF COMPLETION: August 1964

A COMPARATIVE REPORT ON TWO JUNIOR HIGH SCHOOL GUIDANCE PROGRAMS

by Violet Ulrich

PROBLEM: The purpose of this report was to make a comparison between an older established junior high school guidance program (Anoka Junior High School) and a new junior high school guidance program (Roosevelt Junior High School). The purpose was to learn what the teachers and students know or would like to know about their school counseling program and how effective the counselor's job is considered to be by the teachers and students. The plan was to use the older established junior high school guidance system in the district as guide for improving the services in the district's new junior high school guidance system.

PROCEDURE: The data for this report were obtained by: (1) questionnaires submitted to 396 ninth grade students and 45 teachers at Anoka Junior High School; 310 ninth grade students and 51 teachers at Roosevelt Junior High School, (2) personal interviews conducted with Anoka and Roosevelt counselors, (3) a review of the literature relating to the basic services of a guidance program.

FINDINGS: (1) There were more similarities in the two schools than differences. (2) There were significant statistical differences on 14 of the 45 items of the student questionnaire. (3) On the teacher questionnaire only 3 of the 28 items had statistical significance. (4) There seemed to be a lack of understanding on the part of both the students and teachers as to what actual guidance services were available to them.

SUMMARY AND CONCLUSIONS: The study indicates that the biggest weakness of the guidance program seems to be one of effective communication. A major task is how to best acquaint both teachers and students with the services that are available to them.

Examining the differences in the questionnaire changes were suggested for Roosevelt Junior High School in the following guidance areas: (1) Individual services (2) Group services (3) Placement services (4) Teaching staff services

The above areas were also used in showing the Roosevelt percentages that were higher than Anoka percentages on the two questionnaires.

Suggestions for future improvement were made by using the data from the two schools with reference to the review of the literature.

THESIS COMMITTEE: M.E. Van Nostrand, Chairman; Frank B. Slobetz

DATE OF COMPLETION: August 1966

AN ANALYSIS OF THE ADMISSIONS PROGRAM FOR SAINT CLOUD STATE COLLEGE, 1965 AND 1967

by Lyle W. Wagner, Jr.

PROBLEM: It was the purpose of this study to ascertain whether or not a significant difference existed between students who were deferred Fall quarter, 1965, and those students who were admitted Fall quarter, 1965, using grade point average and the drop-out rate as the criteria to analyze the data. This study was concerned with new-entering freshmen, Fall quarter, 1965 and those students who were deferred Fall of 1965 and who enrolled at Saint Cloud State College, Winter quarter, 1966. A second purpose of this study was to ascertain whether or not a significant difference existed between the non-denied group and the denied group, Fall quarter, 1967, using grade point average and the drop-out rate as the criteria.

PROCEDURE: The design of the study involved identifying four different groups of students based on combinations of High School Rank and ACT composite scores. The four groups identified were: (1) deferred group, Fall quarter, 1965, (2) non-deferred group, Winter quarter, 1966, (3) denied group, Fall quarter, 1967, and (4) non-denied group, Fall quarter, 1967. The criteria used to evaluate each group was cumulative grade point averages and drop-out rate after one academic year. Three methods were used to analyze the data. First, tables were constructed to analyze first, second, third quarter and cumulative grade point averages. The deferred and non-deferred groups and denied and non-denied groups were tested at the .01 level of significance using Fisher's "T" test to ascertain if their respective cumulative grade point averages varied significantly. Second, tables were constructed to analyze the drop-out rates. Also, the deferred and non-deferred groups and denied and non-denied groups were tested at the .01 level of significance, using a binomial test for proportions to determine if their drop-out rates varied significantly. Third, expectancy tables were built to analyze an individual's chances of attaining a "C" (2.00) grade point average or higher as a member of a particular group. Thus, the deferred group, Winter quarter, 1966 was compared to the non-deferred group, Fall quarter, 1965, while the denied group, 1967 was compared to the non-denied group, 1967.

FINDINGS: Results based on an analysis of the data as it pertained to the non-deferred group, Fall quarter, 1965 and the deferred group, Winter quarter, 1966, were the following: (1) A significant mean average difference existed between the deferred and non-deferred groups concerning HSR, ACT and MSAT scores at the .01 level of significance, after one academic year. (2) A significant difference existed between the non-deferred group and deferred group

concerning cumulative grade point averages at the .01 level of significance, after one academic year. (3) A significant difference existed between the non-deferred and deferred groups concerning the drop-out rate at the .01 level of significance, after one academic year. (4) A member of the deferred group had an eight per cent chance in 100 of attaining at least a "C" average after three quarters, while a member of the non-deferred group had a 54 per cent chance in 100 of attaining a "C" average or higher. Results based on an analysis of the data as it pertains to the non-denied and denied groups were the following: (1) A significant difference existed between the non-denied and denied groups' mean averages concerning HSR, ACT and MSAT scores at the .01 level of significance, after one academic year. (2) A significant difference existed between the non-denied and denied groups concerning cumulative grade point averages at the .01 level of significance, after one academic year, (3) A significant difference existed between the non-denied and denied groups concerning the drop-out rate at the .01 level of significance, after one academic year. (4) A member of the denied group had a six per cent chance in 100 of attaining a "C" (2.00) average or higher after three quarters, while a member of the non-denied group had a 58 per cent chance in 100 of attaining a "C" average or higher.

SUMMARY AND CONCLUSIONS: The selective admission policy is based on the assumption that those least likely to succeed in college can be predicted with high accuracy by using the HSR and ACT composite scores as predictive variables. Because admission requirements were raised from the 38th percentile on the HSR to 50 and from 16 on the ACT to 18, it would be reasonable to assume that the predictive accuracy would be lessened; that is, the raised standard would result in more error in predicting those students who would be least likely to succeed. However, a comparison between the deferred and denied groups yields an important finding. Concerning the deferred group, three out of 38 attained a "C" (2.00) GPA or higher for one academic year, while three out of 53 attained a "C" average or higher for the denied group. This means that the raised admission standards did not result in greater predictive error; in fact, the predictive accuracy was increased. The general conclusion of the study was that significant difference at the .01 level existed between the deferred and non-deferred groups and between the denied and non-denied groups after one academic year, when cumulative grade point averages and drop-out rates were used as the criteria.

THESIS COMMITTEE: Paul E. Ingwell, Chairman; M.E. Van Nostrand
DATE OF COMPLETION: December 1967

JUNIOR HIGH SCHOOL EDUCATION

A DEMONSTRATION OF STATISTICAL METHOD TO AN EDUCATIONAL PROBLEM

by Gilbert Ludwig Malm

PROBLEM: The major problem of this study was to demonstrate one method of applying statistical methods to a current educational problem. The educational problem under study was the effects of two different mathematics curricula upon homogeneously grouped eighth grade students as measured by their end of year achievement scores. The major problem of this study, therefore, involved the utilization of analysis of variance in testing the hypothesis that there is no difference in end of year achievement between the enrichment group and the acceleration group as assessed by scores on four post tests.

PROCEDURE: The upper thirty per cent of the eighth grade of a large junior high school in a metropolitan school system were selected by means of test scores and teacher recommendation. They were then randomly divided into three groups of forty students each.

One group followed a mathematics curriculum that was adapted to the level of the class by means of acceleration--elementary algebra, a course ordinarily introduced in ninth grade. The other two groups followed a mathematics curriculum that was adjusted by means of enrichment using materials prepared by The School Mathematics Study Group.

The two curricula were evaluated by comparing mathematics achievement as assessed by scores on four achievement tests. An analysis of variance of unweighted means was the statistical tool utilized in comparing the achievement of the two groups.

FINDINGS: When the mathematics achievement of the acceleration group was compared with the mathematics achievement of the enrichment group, there was a significant difference (at the .01 level) in favor of the acceleration group on the following tests: (1) The California Arithmetic Fundamentals Test, (2) The California Arithmetic Reasoning Test, (3) The Cooperative Algebra Test.

When the mathematics achievement of the two groups was compared on The Sequential Tests of Educational Progress--Mathematics Test, no difference was found.

SUMMARY AND CONCLUSIONS: The application of analysis of variance to educational problems is extremely important in educational research. With the utilization of this statistical tool it is possible to make definite statements

regarding the relative effectiveness of two or more educational programs or procedures. It is only through the use of such techniques that education can ever achieve the goal of becoming a science.

When the experimental situation is such that the use of analysis of variance is indicated, no researcher should hesitate to make use of this statistical tool. While the computations involved are lengthy they are not beyond the mathematical skill and comprehension of teachers.

When the mathematics curriculum of junior high school students of superior mathematical ability was adjusted either by means of acceleration or by enrichment, the students were able to assimilate material not normally included in the mathematics curriculum with no accompanying loss in mathematical skill and comprehension.

There was some evidence that acceleration was superior to enrichment as a curricular adjustment for students of superior mathematical ability in the areas traditionally considered appropriate for junior high school students.

THESIS COMMITTEE: Jack R. Jones, Chairman; Paul E. Ingwell

DATE OF COMPLETION: June 1966

READING SPECIALIST

AN INVESTIGATION OF DEVELOPMENTAL VISUAL-MOTOR PERCEPTION IN FIRST GRADE CHILDREN: ITS RELATIONSHIP TO INTELLECTUAL GROWTH AND READING ACHIEVEMENT

by Shirley Birr

PROBLEM: The purpose of this study was to attempt to examine visual-motor perception methods when incorporated into a first grade curriculum. An effort was made to determine: (1) The degree of relationship between visual-motor perception skills and reading achievement at the first grade level. (2) The degree of relationship between visual-motor perception skills and the intellectual growth in six- and seven-year-olds. (3) The intellectual gains made by categorized groupings within the experimental class.

PROCEDURE: Cumulative records, a reading readiness test, and the Wechsler Intelligence Scale for Children were used to determine the degree of unity between the experimental group and the control group. The experimental group participated in a thirty-minute program of visual-motor perception techniques. Time for the exercises was gained by using twenty minutes of an hour-long noon and ten minutes of a rhythm period. This totaled fifty hours between the middle of October and mid-April. In all other respects, the experimental class

and the control class followed the same curriculum. Through letters and conferences, parents were aware of the experiment. The spring achievement tests and the fall and spring WISC results were the basis for the comparisons made. T-tests, significant at the .05 and .01 level, were applied to the inter-group and intra-group results.

FINDINGS: A statistical analysis of the data collected for the two groups indicated: (1) There were no statistical differences between the experimental group and the control group scores in a standardized reading test. (2) There was a significant gain made by the experimental group at the .05 level of confidence, when the two groups were administered an Informal Subjective Reading Inventory. (3) There was a significant gain made by the experimental group, when the two groups' scores on the WISC were computed. (4) There were significant gains within the experimental group, when the initial and final WISC scores were computed.

SUMMARY AND CONCLUSIONS: This study, with controls aimed at giving validity to the findings, revealed significant gains in intellectual growth and lesser gains in reading achievement. The writer concluded that the visual-motor perception program had to contribute toward this gain.

THESIS COMMITTEE: Victor L. Lohmann, Chairmann; Roger L. Rouch

DATE OF COMPLETION: August 1968

A COMPARATIVE STUDY OF THE DEVELOPMENT OF READING RATE AT THE INTERMEDIATE LEVEL

by Robert Burnett

PROBLEM: This study was an attempt to assess the effectiveness of a concentrated program of twenty hours of specialized instruction in the development of reading rate at the intermediate level. It was the purpose of this study to determine if the difference in gains made by the experimental and control groups was enough to warrant specialized instruction in the development of reading rate.

PROCEDURE: The subjects chosen for the purpose of conducting this study were four groups of fifth grade students who were enrolled in two elementary schools in the Edina-Morningside Public School system, Edina, Minnesota. One-hundred seven students were in the study.

The major purpose of the study was to provide a combined instructional program which consisted of controlled reading instruction, tachistoscopic training, timed motivational reading exercises, and extensive free reading

periods. The experimental group received twenty-seven 45 minute periods of specialized training using the combination method. The control group continued with their regular developmental reading instruction under the direction of their respective teachers.

Initial rate of speed and comprehension levels were determined for all students in this study at the inception and termination of the training period. The Monroe's Standardized Silent Reading Tests were used as the instrument of measurement.

FINDINGS: The experimental group, after six weeks of training, read the the material of the testing instrument at the rate of 166 words per minute at a 6.9 grade level of comprehension. The control group, after the same period of time, read the same material at a rate of 135 words per minute at a 5.2 grade level of comprehension. The net average for the experimental group resulted in 51 words per minute and a 2.4 years gain in comprehension. The net average gain for the control group was 20 words per minute and an 8 month advance in comprehension level.

SUMMARY AND CONCLUSIONS: T-ratios revealed that there was a statistically significant difference in the gains in reading rate and comprehension between the experimental and control groups. The significance in reading rate was beyond the 1 per cent level. The significance in comprehension was beyond the five per cent level.

Therefore, it was concluded with a high degree of confidence that there was a significant difference in the development of reading rate and comprehension in favor of the experimental group.

THESIS COMMITTEE: Victor L. Lohmann, Chairman; Paul E. Ingwell

DATE OF COMPLETION: October 1965

AN INVESTIGATION OF THE READABILITY LEVELS OF SENIOR HIGH SCHOOL AMERICAN HISTORY TEXTBOOKS

by Donald Wayne Hurlburt

PROBLEM: It was the purpose of this study to determine the reading levels of recently published senior high school American History textbooks through application of the Dale-Chall readability formula.

PROCEDURE: Seventeen textbooks, with publishing dates ranging from 1962 through 1967, were evaluated in this study. In each book, a 200 word sample was selected from every twenty-fifth page. In that only complete sentences could be counted, chapter titles, captions, and paragraph headings were

excluded. If the twenty-fifth page was completely covered with pictures, tables or graphs so that sentences weren't available, the next page was selected. The number of words outside the Dale list of 3000 words and average sentence length were the two factors measured. From these factors a raw score was computed and, through use of a table, converted to a reading level. To find the average reading level for an entire book, all of its raw scores were totaled, an average raw score obtained and changed to a reading level.

FINDINGS: (1) The textbook, *A High School History of Modern America*, had seventh and eighth grade readability levels. (2) Ten textbooks had ninth and tenth grade readability levels. They are listed starting with the book easiest to read and progressing to the most difficult. *American History Study Lessons*, *Our Nation From Its Creation*, *United States History* (D.C. Heath), *Story of America*, *The American People-Their History*, *United States History* (Scott-Foresman), *The United States-Story of A Free People*, *Rise of The American Nation*, *The Adventure of The American People*, *The American Achievement*. (3) Six textbooks were found to have eleventh and twelfth grade reading levels. They are listed in order from the least to most difficult. *Our American Republic*, *The American Adventure*, *History of A Free People*, *Freedom Under Law*, *Our American Nation*, *United States History For High Schools*. (4) In all books, except *The Adventure of The American People*, the last half of each book was more difficult to read than the first. (5) All textbooks, with the exception of *American History Study Lessons*, contained samples that required college level reading ability.

CONCLUSIONS AND SUMMARY: (1) High school teachers have history materials available that will permit them to meet the reading needs of students whose reading abilities range from grades seven through twelve. The selection of the same textbook for everyone in a class no longer seems justified. (2) Because most history books are progressively more difficult to read, the teacher who matches reading levels to reading abilities will afford students the opportunity to achieve growth in reading. (3) All textbooks, but one, contained material that required college level reading ability; therefore, all students will not be able to read the entire textbook with a consistent degree of effectiveness. (4) Publishers, with the exception of the Laidlaw Brothers Company, have not attempted to provide for the wide range of reading abilities found within most high school classrooms. In addition, their textbooks still contain material that is very difficult to read. It would seem that history textbooks could become more effective teaching tools if publishers (a) produced several books for high school history classes each with a different reading level, and (b) located and rewrote the portions of their textbooks that are very difficult to read in comparison to the rest of the book.

THESIS COMMITTEE: Victor L. Lohmann, Chairman; Edwin H. Cates

DATE OF COMPLETION: August 1967

THE FREQUENCY OF OCCURRENCE OF VARIANT AND INVARIANT SUFFIXES IN THE ELEMENTARY SCHOOL VOCABULARY

by *Virginia P. Johnson*

PROBLEM: It was the purpose of this study to compile two lists of suffixes for each grade level which it is recommended be taught because of their frequency of occurrence in the words introduced in four widely used sets of readers and in Dr. Arthur Olson's *A Basic Word List: Seven Basal Readers*. These lists consist of: (1) a list of invariant suffixes which would be a definite aid to the pupil in determining word meaning in any context and useful as pronunciation units valuable in word identification, and (2) a list of variant suffixes which would be valuable only as pronunciation units for word identification.

PROCEDURE: Several sources were checked in order to obtain as complete a list of suffixes as possible. The validity of each suffix was checked with *The American College Dictionary*, 1961 edition.

The suffixes were then divided into two lists according to whether they were invariant (according to Deighton's findings) or variant. The suffixes were then alphabetized.

Each word in *A Basic Word List: Seven Basal Readers*, developed by Dr. Olson from seven basal readers, and each word introduced in *The American Book Co.*, *Scott Foresman Co.*, *Houghton Mifflin Co.*, and *Ginn Co.* basic reading series was then checked to ascertain whether it contained a suffix.

This suffix was then categorized according to whether it was variant or invariant. Any suffix that appeared in three or more words at any grade level was judged by the researcher to occur frequently enough to justify the recommendation that it be taught to youngsters and applied, or applied if it was initially taught at a preceding grade level.

FINDINGS: There is a total of thirty-nine invariant suffixes and thirty-two variant suffixes which occur at least three times in the elementary grade reading vocabulary from grade one to grade six. Suffixes occurring frequently at one level (three times or more) occur again, with a few exceptions, at the next level with greater frequency.

CONCLUSIONS: It appears that there is a core of variant and invariant suffixes that can be identified as being contained in the kinds of words to which youngsters are introduced as they read their stories in the basal readers which have a frequency of occurrence of three times or more and thus should be taught in the elementary school.

THESIS COMMITTEE: Hugh Scharphauster, Chairman; Owen O. Hagen

DATE OF COMPLETION: August 1966

A DEVELOPMENTAL READING PROGRAM FOR ST. FRANCIS HIGH SCHOOL

by Sister M. Priscilla Malley, O.S.F.

PROBLEM: The purpose of this study was (1) to review the literature pertaining to high school developmental reading programs, (2) to survey the current attitudes of teachers and principals in the Diocesan high schools toward certain reading study skills, and (3) to use the above information in a developmental reading program at St. Francis High School for the teachers of English, mathematics, science, and social studies.

PROCEDURE: The data reported in this study were obtained by (1) an examination of the professional literature and research concerning high school developmental reading programs, and (2) a questionnaire submitted to the principals and teachers of English, reading, science, social studies and mathematics in the high schools of the St. Cloud Diocese.

Permission to administer the questionnaire was obtained from the Diocesan Superintendent of Schools. The results from the questionnaire were tabulated and converted into suggestions for giving reading instruction in the regular classroom while teaching a specific content subject.

FINDINGS: The findings indicated the following: (1) A gap existed between what was considered theoretically desirable and what was actually being done in the classroom. (2) Respondents of the Diocesan survey were in general agreement that there is a need for improvement in many areas of existing reading and study practices. (3) A large majority of the respondents expressed the need for much improvement in the present programs of in-service training for teachers. (4) All students benefit from a developmental reading program because it is based on the concept that it starts with students at their present reading level and develops reading abilities to higher or better levels. (5) An effective developmental reading program is the responsibility of every teacher who requires the students to read. (6) A thorough program of developmental reading does not stop with the elementary grades but progresses through the entire high school curriculum even into college.

CONCLUSION: Developmental reading instruction is not considered an independent subject but is a way to teach and also a process which refines and develops specific skills in the entire range of the curriculum. The emphasis is on the student - his needs, abilities, interests, aspirations and achievement. The assumption is that the teachers will provide students with practice in using reading and study skills simultaneously in the content subjects. The ideal is to help each student grow to his full reading potential.

THESIS COMMITTEE: Victor L. Lohmann, Chairman

DATE OF COMPLETION: January 1967

A SURVEY OF THE READING PROBLEMS IN THE CATHOLIC ELEMENTARY SCHOOLS OF THE ST. CLOUD DIOCESE

by Sister Mary Nicholas Squillace, O.S.F.

PROBLEM: The purpose of this study was to provide an inventory of some of the present problems in reading in the Catholic elementary schools of the St. Cloud (Minnesota) Diocese, to provide some facts and statistics to aid in evaluating the present practices and methods of teaching, and to make recommendations for improving the teaching of reading.

PROCEDURE: A questionnaire was designed and sent out to the elementary schools of the Diocese. It consisted of seventeen questions dealing with organization, methods of teaching, materials and equipment available to the teachers, the use of teachers' materials, diagnostic procedures and provisions made for students needing remedial help. The writer tallied the returns. Tables using number and percentage to show the information was designed. Some of the data was converted into graphs for easier analysis. This data was evaluated in the light of recent research and the experience of noted reading specialists, after which, conclusions were drawn and recommendations for improving the reading in the schools were made.

FINDINGS: The findings of this study were as follows: (1) The time allotted to formal reading instruction appeared to be adequate for good teaching. (2) The method of organization most utilized by the teachers was grouping in the self-contained classroom. Some teachers indicated using the individualized reading program. (3) Most of the teachers of the Diocese divided their classes into manageable groups and thus reduced the range of individual differences and simplified reading instruction. (4) The criteria used to place children in their respective reading groups were in accordance with the suggestions made by most reading authorities who advise the teachers to use their judgment for pupil placement. (5) The testing program used by teachers to evaluate the reading progress of their students and the reading program of their choice was deemed adequate and in accordance with reading authorities. (6) About one-half of the teachers of the Diocese judged themselves to have only a partial knowledge and understanding of the basal reading text they were using for instruction. (7) A wide variety of teaching materials and equipment was not utilized by the teachers. (8) A plentiful and diversified selection of library books was not made available to the teachers and the students in order to further develop the basal reading program. (9) The remedial reader was instructed by the classroom teacher very often and few schools had remedial reading teachers available. (10) The provisions made to detect physical disabilities appeared to be well taken care of through the routine examinations by the schools.

SUMMARY AND CONCLUSIONS: An analysis of the questionnaire data revealed that the elementary schools of the St. Cloud Diocese were doing a good job of providing reading instruction. The problems that were most outstanding were all problems that could be resolved. Therefore, the recommendation that was made suggested that a Diocesan staff of reading consultants be set up to aid the teachers and the principals to solve the problems that may keep them from having an excellent reading program in their schools.

THESIS COMMITTEE: Victor L. Lohmann, Chairman; Paul E. Ingwell

DATE OF COMPLETION: August 1965

REHABILITATION COUNSELING

A COMPARISON OF MINISTERS' WITH PSYCHOLOGISTS' RESPONSES TO THE MINISTERIAL ATTITUDINAL SCALE

by Donald Ernest Johnson

PROBLEM: Ministers have become increasingly interested in personal problem centered counseling. That this is so is evident by the number of counseling seminars and short term courses in psychology that are being offered for ministers; the establishment of a national clinical training institute for pastors; and the increasing number of courses that are being offered for seminary students which deal with "pastoral counseling". It is also evident when one views the growing number of books that are being published for pastors that deal with psychology, counseling and the behavioral sciences.

However, usually, the materials being offered to pastors are those that were developed by and for secular psychologists and counselors.

Traditionally, ministers represent the authority of God. Their role has been to teach their interpretation of God's view on moral behavior. They teach an ethical system based on the life and words of Jesus Christ. It would seem that the attitudes of the traditional pastor are different than those of the typical behavioral scientist. To test this possibility it was necessary to devise a situation to which both ministers and psychologists could respond and which would allow a comparison of their responses.

PROCEDURE: An instrument was developed which consisted of items which were designed to reveal the attitude of the person who responded to them. The responses could be tabulated, weighed, analyzed, and compared in order to measure the existence of differences or similarities between groups responding to the instrument. This instrument called the Ministerial Attitudinal Scale was mailed to one hundred members of the Minnesota Council of Churches and

to fifty members of the Minnesota Psychological Association. The responses of the ministers and the psychologists were tabulated and compared.

FINDINGS: Although some individual ministers and psychologists responded to the instrument in a similar fashion, a comparison of the two groups as units demonstrated marked differences. The difference greatly exceeded the tolerance needed to sustain at the .05 level of significance.

SUMMARY AND CONCLUSIONS: The intent of this project was to demonstrate the possible existence of differences of attitudes between ministers and psychologists. No attempt was made to demonstrate that one attitudinal stance was better or more appropriate than the other. The existence of such marked differences does carry some definite implications for those pastors who seek to do personal counseling as a part of their ministry.

Among other things this research would question the appropriateness of simple emulation of the skills of the behavioral scientist by the pastor. Pastoral counselors should know what affect basic differences in attitudinal stance might have before attempting to use psychological techniques.

This research suggests that the attitudes of the psychologist and the pastor are so different as to make it impossible for one man to fulfill both functions without distorting one or the other.

There are other conclusions one might draw based on the information provided by this research.

Although differences between the responses of ministers and psychologists were expected the extreme differences demonstrated by this research were not anticipated.

THESIS COMMITTEE: Eugene Perkins, Chairman; David J. Lesar

DATE OF COMPLETION: December 1968

SPEECH AND HEARING THERAPY

A STUDY ON THE EFFECTS OF POSITIVE REINFORCEMENT ON THE LENGTH OF RESPONSE WITH NORMAL SPEAKING CHILDREN

by Alvin G. Baas

PROBLEM: The purpose of this research was to study the effects of positive reinforcement on the length of response of the normal speaking child.

PROCEDURE: A group of 30 normal speaking students was selected from the second and third grades of St. Mary's Parochial School, St. Cloud, Minnesota. The subjects (S's) were matched for age, sex, I.Q. and socio-economic status and divided into an experimental and control group with 15 in each group. The groups were exposed to two segments; a baseline segment and an experimental segment.

Segment I consisted of establishing a baseline or the mean number of words used per response. To accomplish this, thirty pictures were selected from the Peabody Language Development Kit (PLDK), Level II, Occupations section. The pictures were presented to the subjects individually, who were instructed to respond to the picture. This procedure was followed for both groups (total 30), and group means were established.

Segment II was identical to segment I for the control group except for a difference in the order of picture presentation. The experimental group, however, was rewarded with a token for each increase in the number of words used over the preceding response. The tokens were later exchanged for a choice from a variety of trinkets and candy.

FINDINGS: These results were subjected to a two-tailed "Student's t " test. The results of this procedure indicated that the group differences were not significant at the .05 level.

Several possible factors were discussed which may have been related to the obtained results. The number of trials may have been too few to permit an opportunity for conditioning. Secondly, the unfamiliarity of the subjects with the experimental test rooms may have been a factor. Thirdly, the subjects had not been previously exposed to the token as a reward nor had they experienced "buying" things with them. Although none of these factors can be conclusively demonstrated from the data obtained in this study, there does seem to be some merit in considering them in future studies involving similar procedures.

SUMMARY AND CONCLUSIONS: Within the limitations of this study, it appears that the procedures followed in this study are ineffective in significantly increasing the number of words of a response. This study is considered to be an exploratory study and further research is suggested which would incorporate the recommended changes.

THESIS COMMITTEE: Joan Jacobson, Chairman; Frederick C. Markwardt, Jr.

DATE OF COMPLETION: June 1967

